I. INTRODUCTION

A. General

1. The SC Earthquake Plan is Appendix 3 to the SC Emergency Operations Plan (SCEOP) that assigns responsibilities and actions to state agencies and organizations prior to the occurrence of a damaging earthquake in order to be responsive after the occurrence.

2. Unlike other natural disasters, earthquakes occur without warning and could strike anytime. The unpredictable nature of an earthquake and aftershocks will cause great physical and societal impacts over a broad geographic region. It takes years for a community to recover from a damaging earthquake.

B. Purpose

To provide operational concepts unique to earthquake planning and response, and assign responsibilities to State agencies to meet the needs of local governments following a catastrophic earthquake.

C. Scope

1. This plan establishes the policies and procedures to be conducted by the State when responding to the damaging consequences of an earthquake.

2. This plan supports the National Response Framework (NRF). The National Response Framework (NRF) presents the guiding principles that enable all response partners to prepare for and provide a unified national response to disasters and emergencies. It establishes a comprehensive, national, all-hazards approach to domestic incident response.

3. This plan has two components:

   a. **Basic Plan** contains responsibilities, operational concepts, functional task assignments, and attachments which provide specific planning guidance for earthquake response actions. The attachments are:

      (1) Attachment A Earthquake Checklist:
      Lists of tasks to complete following an earthquake.

(2) Attachment B Planning Scenario:
Describes a worst-case earthquake scenario for planning and response purpose.

(3) Attachment C Operational Area Planning:
Details a response and resource deployment concept for areas that may be isolated as a result of severe transportation infrastructure damage.

Figure 1: Operational Area Entry Map:
Identifies locations and routes (aerial/ground) where resources will be received and deployed.

Table 1: Loss Estimation for Charleston, Berkeley, Dorchester, Beaufort, and Colleton Counties:
Provides loss estimates for operational areas expected to receive significant damage.

Table 2: Critical Resource Needs Assessment:
Identifies estimates on resource availability, shortfall, and where additional resources can be obtained.

(4) Attachment D Earthquake Intensity Scale:
Lists typical effects of an earthquake in various magnitude ranges.

(5) Attachment E Earthquake Intensity Map:
Illustrates the strength of ground shaking at particular locations.

(6) Attachment F Earthquake Liquefaction Probability Map:
Illustrates the liquefaction potential at particular locations.

b. **Individual annexes** utilize the Emergency Support Function (ESF) concept for each of the major response functions/activities. Annexes describe the hazard-specific concept of operations, actions, and responsibilities that pertain to the function being covered.

c. **Attachments** follow the Annexes which support the ESF planning and response for an earthquake.

II. SITUATIONS, FACTS, AND ASSUMPTIONS

A. Vulnerability Analysis

South Carolina has completed the Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina, 2001, using the Federal Emergency Management Agency (FEMA) Hazards United States (HAZUS). The study, based on scientific research, provided information about the likely effects of earthquakes on the current population and on contemporary structures and systems, including roadways, bridges, homes, commercial and government buildings, schools, hospitals, and water and sewer facilities.

B. Situation

1. An earthquake is a sudden, rapid shaking or trembling of the earth's surface, and could be highly destructive. It will occur without warning, and a strong earthquake will cause severe damage and a large number of casualties over a wide area. Aftershocks may occur for some period of time, but will diminish gradually over the course of time.

2. Two methods are used to measure earthquakes; intensity and magnitude.

   a. Intensity is measured by the Modified Mercalli Intensity (MMI) Scale. It is a subjective measure of damage based on the observed effects of the earthquake. The scale categorizes intensity from I (Micro) to XII (Rate Great). The Charleston Earthquake of 1886 MMI is estimated at Intensity X.

   b. Magnitude (M) is a measure of an earthquake's size. Most earthquakes' magnitudes less than 3.9 would not cause any significant damage, and may only be felt by a few people in the area of occurrence. An M 6.0 earthquake is typically the threshold for causing serious damage. Earthquake Magnitude (M) classifications are:

      - Great = M > 8.0+
      - Major = M 7.0 to 7.9
      - Strong = M 6.0 to 6.9
      - Moderate = M 5.0 to 5.9
      - Light = M 4.0 to 4.9
      - Minor = M 3.0 to 3.9
      - Micro = M < 3.0

3. Most earthquakes occur along faults or breaks between massive continental oceanic/tectonic plates that collide, slide, or separate, creating earthquakes. South Carolina, however, is located in the middle of the North American tectonic plate. Consequently, earthquakes occur less frequently, but more violently, over a much greater area due to sub-surface geological conditions.

C. Hazards Analysis

1. Strong earthquakes in South Carolina have the potential to cause great and sudden loss. The state has a population of 4.5 million people and each person can be affected by an earthquake. While there have not been any large scale earthquakes in recent years, the state experiences smaller earthquakes annually. These are typically low-level events with magnitudes ranging from less than 1.0 to approximately 3.0. About 70 percent of these occur in the vicinity of the epicenter of the 1886 Charleston earthquake, a region referred to as the Middleton Place-Summerville Seismic Zone (MPSSZ).

2. A great earthquake occurring anywhere in the State would result in immediate activation of the State Emergency Operations Center (SEOC) and the State Emergency Response Team (SERT). The most probable location for a great earthquake event would be Charleston, South Carolina.

D. Facts

1. The two most significant historical earthquakes to occur in South Carolina were the 1886 Charleston/Summerville earthquake and the 1913 Union County earthquake. The Union County earthquake occurred on the afternoon of January 1, 1913 near the town of Union with an estimated magnitude of 5.5. Shock waves moved out from the western portion of South Carolina into adjacent Georgia and North Carolina, and even up into parts of Virginia. Fortunately, damage was minimal and no deaths resulted.

2. The 1886 earthquake in Charleston was the most damaging earthquake to ever occur in the eastern United States. In terms of lives lost, human suffering, and devastation, this was the most destructive United States earthquake in the 19th century. Facts about the 1886 Charleston, South Carolina Earthquake:

   a. Occurred August 31, 1886. The main shock was followed by an aftershock two minutes later, and many more shocks were felt over the next three years.

b. Time: 9:51 p.m. Eastern Standard Time

c. M = 7.3

d. Intensity on Modified Mercalli Scale = X

e. Two epicenters were reported:

- Woodstock, a railroad stop on the Southern Railway leading into Charleston located 21 miles northwest of Charleston.
- Ravenel, a small town 23 miles southwest of Charleston.

f. Felt over 2.5 million square miles (from Cuba to New York and Bermuda to the Mississippi).

g. Approximately 60 persons lost their lives.

h. Ninety percent of the brick structures in Charleston were damaged. (Today that would equate to approximately 24 million tons of debris.)

i. Damaging secondary effects were fires, ruptured water and sewage lines, damaged wells, and flooding from a cracked dam in Langley, South Carolina.

j. Dollar damage estimates in 1886 dollars were about $5.5 million. (In today's dollars, that would equal to approximately $900 million.)

E. Assumptions

1. The Governor will declare a State of Emergency and request a Presidential Declaration.

2. An earthquake of M 6.0 or greater could quickly exceed state and local resources. It is anticipated that a significant amount of external resources will be required for a disaster response. South Carolina will immediately request support from FEMA.

3. FEMA will activate the Catastrophic Incident Annex to the National Response Framework (NRF-CIA).

4. Damaged roads may not be functional for many weeks or months.

5. Damage to transportation, communication, and other infrastructure systems will isolate communities, creating virtual islands within the disaster areas. For at least 72 hours after an earthquake, affected local governments and individuals will be attempting to meet their own emergency needs.

6. Significant aid from state and federal governments to local governments may not be available for 72 hours.

7. SCEMD will activate the Statewide Mutual Aid Agreement and the Emergency Management Assistance Compact (EMAC). Established mutual aid agreements will be honored to the extent possible.

8. Shelters identified for use during other natural disasters may not be available in the impacted area. Sheltering may take place outside the impacted area.

9. SERT will report to the State Emergency Operations Center (SEOC), and the State Assessment Team (SAT) may be deployed.

10. The SEOC and county emergency managers in the damaged areas may need to establish alternate Emergency Operations Centers (EOC) due to possible structural damage to the primary EOC.

11. The SC Logistics Plan, which is Attachment A to SCEOP, will be activated.

12. The Catastrophic Incident Response Plan, which is Appendix 9 to SCEOP, will be activated.

13. Tourist populations and business conventions and/or conferences will be occurring in the State.

14. SC is not recovering from any disaster that could hamper the State's response to an earthquake.

III. CONCEPT OF OPERATIONS

A. General

Under the strong earthquake conditions this plan addresses, certain variations to the statewide emergency management coordination system are required. Primarily, these changes involve the establishment of hazard-specific operational concepts for earthquake response.

B. Plan Activation

1. Due to the potential of light to moderate damage from earthquakes within the magnitude ranges of 4.0 to 5.9, SCEMD will activate at OPCON 4 with internal staff to assess the potential impact from the event. SCEMD will contact the impacted county(ies) to assess the situation. Upon assessment, SCEMD Director will determine if there is a need for further SEOC activation or return to normal operating conditions.

2. The activation trigger for a full-scale SEOC earthquake operation is M ≥ 6.0. Activation of the SCEOP including Annex 9 Catastrophic Incident Response Plan, SEOC SOPs, and this plan will occur. The SEOC will be activated at Operating Condition (OPCON) 1.

3. SC Warning Point will contact SERT using all available notification systems (REACH SC, telephone, pagers, EAS, etc.). SERT shift members will report to the SEOC within two hours or less upon confirmation of an M ≥ 6.0 earthquake. If notification systems are not operational, SERT will self-deploy to SEOC. The media will serve as SERT source on the confirmation of M 6.0 or greater earthquake. ESFs will begin implementing SOPs, agency/organizational response actions, and the Earthquake Checklist. The Earthquake Checklist is used to guide response operations following a strong earthquake. Activities in the Earthquake Checklist do not replace required activities normally assigned to ESFs in the SCEOP and supporting ESF SOPs. The Checklist activities are to ensure that critical actions are completed and continue at the appropriate time during an earthquake response. The Assistant Operations Information Officer will complete the operations desk checklist. See Attachment A to this Annex for Checklist.

4. If the SEOC is damaged due to the earthquake, members will be notified by SC Warning Point to report to the Alternate Emergency Operations Center (AEOC). The AEOC location and operating procedures are found in the SEOC SOP.

5. Even though SERT members are required to report to the SEOC, it is critical that SERT members utilize SEOC shift operations procedures (if the earthquake occurs at night, then the night shift reports, and if it occurs during the day, then the day shift reports). This procedure will ensure the ability to sustain operations. If members are unsure of when to report, contact the SC Warning Point.

C. National Incident Management System

This Appendix conforms to the National Incident Management System (NIMS) and the Incident Command System (ICS), as outlined in the SCEOP, Section III. Paragraph C for the response and management of the catastrophic affects resulting from an earthquake occurring in South Carolina.

D. Operational Area Model

1. A strong earthquake in South Carolina would have significant damaging consequences that may result in isolated areas within the disaster zone. Such conditions could effectively isolate communities within the county from one another as well as from the rest of the State. The resulting damage will make movement of human and material resources to the affected areas difficult, resulting in the need to target specific areas with a significant response effort. See Planning Scenario, Attachment B to this plan.

2. To mitigate the effects of a disaster of any size and type, SCEMD, in coordination with each county, has developed Operational Areas and Operational Area response protocols within their respective areas of responsibility. The Operational Area Model, Annex 1 to Appendix 9 of the SCEOP and Attachment C to this plan, provides detailed information to the State's operational area concept of operations.

E. County Actions

1. Preparedness

Local governments will incorporate the planning concepts of this plan within their emergency planning processes; including exercises and training to ensure the performance of all emergency functions are maintained.

2. Response

a. When an earthquake occurs, local emergency managers and emergency responders will activate to respond to the disaster. All available resources within the damaged areas will be used to support lifesaving and property protection actions.

b. Counties emergency managers will coordinate with ESF agency representatives, volunteer organizations, and other local emergency managers to ensure a coordinated earthquake response.

3. Recovery

Local emergency managers will contact the SEOC as soon as possible and provide reports by the best operable communications system following the earthquake. The report should include but not be limited to the following information:

a. The locations of collapsed structures with trapped persons.

b. Status of communications systems to include broadcast media.

c. Status of transportation infrastructures, i.e., bridges, roads, etc.

d. Locations to provide critical medical assistance.

e. The operational capability of critical facilities, i.e., hospitals, sewage and waste stations, electrical substations, etc.

f. Locations of major firefighting efforts and out-of-control fires.

g. Hazardous material releases and the impact on the general public.

h. The extent of damaged areas.

i. Locations of facilities or open spaces that could serve as shelters.

j. Public safety needs, i.e., security, traffic control, and law enforcement.

4. Mitigation

Counties can promote earthquake mitigation through grants and plans. Counties implementation of education and awareness programs, activities at schools and public events, and encourage citizens to implement activities will also help to mitigate the damaging effects of earthquakes.

F. State Actions

1. Preparedness

South Carolina will develop plans, policies, and procedures designed to prepare for, respond to, and recover from an earthquake. State agencies assigned specific missions as outlined in this plan will develop specific

procedures and checklists necessary to accomplish assigned tasks as well as heavy equipment response plans.

2. Response

a. General

1) SERT will mobilize and provide all necessary resources to the affected population in an expeditious and organized manner. Critical incident objectives for response will be prioritized in this order:

a) Saving and sustaining lives

b) Protecting/preserving public health and safety

c) Restoring critical infrastructure and critical public services

d) Mitigating future property damage

2) SEOC Operations will request assistance from FEMA and other states through EMAC because state-level resources may rapidly be exhausted.

3) Forecasts and projections will be developed to cover future resource allocations based on estimated priorities and resource needs projections as established by the SERT Executive Group.

4) If mass evacuation of the impacted area is required, SCEMD will activate the Mass Transportation Evacuation Plan to transport disadvantaged populations. Transportation-disadvantaged populations include numerous categories of people without personal vehicles. See Annex 5 to the Catastrophic Incident Response Plan, which is Appendix 9 to the SCEOP for more information.

5) SERT members will ensure that response activities within their respective areas are coordinated between the various ESFs and SERT Operations Group, and that they are in concert with the priorities and policies established by the SERT Executive Group. Decisions with regard to the allocation of limited resources shall be coordinated

and accomplished according to SERT Executive Group decisions.

6) Response operations will use an Earthquake Checklist that will be executed following a strong earthquake. Activities in the Earthquake Checklist do not replace required activities normally assigned to ESF in the SCEOP and supporting ESF SOP. The Checklist activities are to ensure that critical actions are completed or continuing at the appropriate time during an earthquake response. See Attachment A of each ESF annex for its checklist.

7) Requests for assistance will support lifesaving and life-sustaining operations. Within the first 72 hours, the response effort in support of lifesaving operations are:

NOTE: Many of these actions can take place simultaneously.

a) Communication: Establishing centralized communications to coordinate rescue and response efforts and to determine extent of damage.

b) Transportation: Assessing roads and bridges to determine structural safety to transport resources and victims to medical facilities in the damaged areas. This will include the implementation of the Mass Transportation Plan if required.

c) Health and Medical: Providing medical care and assisting in transporting the seriously injured to triage or functioning medical facilities.

d) Basic Human Needs/Mass Care: Providing basic mass care (food, water, and shelter).

e) Public Information: Providing accurate, consistent, and expedient emergency information to the public.

f) Law Enforcement: Providing for the public safety of citizens.

g) Firefighting: Directing firefighting efforts to the most essential facilities and control of the spread of fires.

h) Hazardous Materials: Inspecting and evaluating the level of HAZMAT release and the impact on the public.

i) Preliminary Damage Assessment: Conducting preliminary damage assessment of critical facilities.

b. Damage Assessment

It is essential for emergency response personnel to take immediate action to gather damage assessment information. This information is needed to determine the severity and extent of injuries and damages. Further, this data gathering effort should provide much of the information decision makers will need to implement and prioritize response actions for search and rescue, communications, access and control to the impacted area, debris clearance, mass care, etc.

1) If practical, SCEMD will activate the SAT to conduct ground and aerial surveys to determine the scope of the damage, casualties, and the status of key facilities as soon as possible.

2) SERT will request ESF-1 Air Branch to conduct an immediate air assessment of bridges and roads.

3) SERT Operations Group will immediately deploy ESF RRTs (noted below) to provide detailed damage assessment and human service assistance.

4) ESF Rapid Response Teams (RRTs) will provide detailed damage reports to the SERT. ESF RRTs will conduct operations in the following functional areas:

a) ESF-1 Seismic Response Team (SRT): conduct structural inspection of critical bridges and recommend safe usage of roads.

b) ESF-2 SCEMD Operational Area Communications Teams: establish point to point

communications with affected counties and SEOC.

c) ESF-3 Post-Disaster Inspection Team: conduct structural damage inspection and evaluation of critical facilities in conjunction with local building officials.

d) ESF-10 Technical Assistance Team (TAT) for HAZMAT response: inspect the condition of hazardous material (HAZMAT) facilities in the damaged area.

5) Detailed information concerning the ESF RRTs' mission, organization, and deployment can be found in the respective ESF annex.

3. Recovery

The State will facilitate the recovery from the effects of an earthquake by requesting FEMA perform a joint preliminary damage assessment (PDA) as soon as practical following the earthquake and by streamlining the process for receiving a Presidential Disaster Declaration. After a disaster declaration, the State will quickly integrate with FEMA's Joint Field Office (JFO) and plan and conduct Applicants' Briefings in all affected counties to inform potential applicants of any Federal funding that may be available and how to apply for and use Federal funds for recovery. The State will be the conduit for Federal funds, and will provide all eligible funding to applicants in accordance with program policy. The State will conduct final inspections on small projects, and provide assistance in conducting final inspections on large projects as well as technical assistance, when requested, regarding all Individual and Public Assistance programs.

4. Mitigation

In order to mitigate to reduce the effects from an earthquake, South Carolina has conducted a vulnerability assessment using Hazards United States (HAZUS-MH). It was determined that an earthquake similar to the Charleston earthquake of 1886 is the worst-case scenario and will significantly impact the State. To reduce losses, the State developed a mitigation strategy comprised of a list of goals, objectives, and actions to be taken, including loss prevention, property protection, natural resource protection, structural projects, emergency services, and public

information and education. With this strategy in place, South Carolina will be more resilient to earthquakes.

G. Federal Actions

1. Preparedness

Recognizing that Federal and/or national resources are required to augment overwhelmed State, tribal, and local response efforts, the National Response Framework Catastrophic Incident Annex (NRF-CIA) establishes protocols to identify and rapidly deploy key essential resources that are expected to be urgently needed/required to save lives and contain incidents. States are encouraged to conduct planning in collaboration with the federal government for catastrophic or no-notice incidents as part of their preparedness activities.

2. Response

~~a.~~ Upon the occurrence of a no-notice or short-notice catastrophic event resulting in little or no time to assess the requirements of the state, tribal, and local governments, all federal departments and agencies initiate actions to mobilize and deploy resources by scenario type as planned for in the NRF-CIA.

b. The government will deploy federal resources, organized into incident-specific "packages," in accordance with the NRF-CIA and in coordination with the affected state and incident command structure. Incident-specific resources and capabilities (e.g., medical teams, search and rescue teams, communications, equipment, transportable shelters, preventive and therapeutic pharmaceutical caches, etc.) are activated and prepared for deployment to a National Logistics Staging Area (NLSA) near the incident site.

3. Recovery

In the later period of the response phase, FEMA will conduct a joint Preliminary Damage Assessment (PDA) with the state to facilitate the recovery from the damaging consequences of an earthquake impacting South Carolina. Upon meeting or exceeding the State's Individual and Public Assistance thresholds, the results of the PDA will be used in the Governor's request for a Presidential Disaster declaration. FEMA facilitates the process of presenting the Governor's request to the President along with their recommendation, and following a decision, FEMA communicates any decision to the State. FEMA coordinates the selection, set up, and management of the JFO. FEMA will assist the

State in determining how long a JFO will remain open, and will assist in the transition from a JFO to either the State's Disaster Field Office (DFO) or the State's offices on Fish Hatchery Road in West Columbia.

4. Mitigation

Under the Disaster Mitigation Act of 2000, FEMA mandated that all states have a FEMA-approved hazard mitigation plan to mitigate the effects of earthquakes. With a state hazard mitigation plan in place, FEMA provides mitigation grant funding pre-disaster in the form of the Pre-Disaster Mitigation (PDM) Grant Program, Flood Mitigation Assistance (FMA) Program, Repetitive Flood Claims (RFC) Program, and the Severe Repetitive Loss (SRL) Program. Post-disaster, FEMA will provide the Hazard Mitigation Grant Program (HMGP), which enables mitigation measures to be implemented during the recovery phase of a disaster. The State Hazard Mitigation Plan must be updated by the state and approved by FEMA every three (3) years to be eligible for Federal mitigation funding.

IV. DISASTER INTELLIGENCE AND COMMUNICATIONS

Section IV of the SCEOP describes the process that the State uses to acquire and disseminate information on disasters that impact it. As with all disasters, South Carolina government on all levels will provide consistent, coordinated, accurate, and timely information to the at-risk public. Disaster Intelligence planning begins before an earthquake occurs, it will intensify, and continue after the event.

A. Information Planning

The SC Comprehensive Seismic Risk and Vulnerability Study provides results which allowed the State to better understand its earthquake risk and vulnerabilities and to prepare the earthquake elements of its preparedness, response, and mitigation plans. The consequences of a strong and damaging earthquake are expected to overwhelm state and local government initial capabilities to respond. The SERT coordinates resources to save lives and protect property. However, citizens' preparedness is crucial to the preparedness and response effort because the affected population may be on their own for the first 72 hours following a strong earthquake.

B. Information Collection

1. Responders will report information to the SERT Operations Group by whatever communication system available.

2. SERT is the primary point for receipt and analysis of all incoming reports received from county emergency managers, the regional

emergency managers (REM), Incident Commanders (IC) in Operational Areas, and state officials in the field. SERT representatives should ensure that all incoming reports received are as accurate and current as possible. Reports should include information on damage areas and locally available and committed resources in the impacted counties.

3. The information obtained from the disaster intelligence and county situation reports will be the basis for resource allocation and prioritization.

C. Public Information Dissemination

1. Upon the Governor's Declaration of a State of Emergency, ESF-15 Public Information will be the primary coordinating element in the dissemination of public information during emergency and disaster operations. State government news releases will be issued to the media statewide and to national and international media as appropriate, with priority consideration given to the media most able to effectively communicate with the at-risk population. Sample press releases and Emergency Alert System (EAS) messages can be found in Annex 15 of this plan. The SEOC will request State-level activation of the EAS when appropriate.

2. Processes to disseminate information of public interest will follow established Public Information channels. Radio, television (both broadcast and cable), internet, print, news release, twitter, and live interviews will be used. The SCEMD web page, www.scemd.org along with webpage's of other state agencies will also provide timely information and dissemination of items of public interest.

V. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. General

Section V. of the SCEOP describes the roles and responsibilities of each county, State, and Federal agency in the preparation for, the response to, and recovery from a major disaster impacting the State.

B. Emergency Organization

SCEMD and supporting agencies primary responsibilities before the event are to mitigate and prepare for earthquakes to minimize the loss of life and to safeguard property. The response strategies and resource projections contained in this plan are based in part on the worst-case earthquake scenario so emergency organizations can plan for resource requirements. A strong

earthquake in South Carolina is likely to have long-term impacts within the impacted areas.

C. County

Under the conditions anticipated for a strong earthquake, the following responsibilities should be included in local government planning and preparation:

1. Participate in HAZUS training to be able to determine the estimated level of damage.
2. Develop earthquake response checklists for emergency response agencies.
3. Develop and/or enhance county communication systems to provide for back-up communications should primary systems fail.
4. Use the Operational Area Concept for earthquake planning by assisting SCEMD identifying locations that could potentially serve as Incident Command Posts (ICP) and Operational Area Entry Points. The operational entry points are pre-identified locations in an Operational Area where resources (equipment, supplies, personnel, etc.) will be received and later deployed within the area. The operational area entry points could be roadways, waterways, airports, and heliports within the operational area. These points of entry are situation dependent and could change due to the severity of the earthquake. See Attachment C, Operational Area Planning for more information.
5. Assist ESFs in earthquake planning as required.
6. Establish and conduct earthquake mitigation and awareness public education programs.
7. Participate in earthquake response exercises to test functions and plans.
8. Ensure county alternate EOC has the ability to function in the event the primary EOC is inoperable.
9. Sign and participate in the Statewide Mutual Aid Agreement.

D. State

The State of South Carolina has an emergency management organization incorporating government agencies, private, and volunteer organizations that

have responsibilities for emergency management within the State as promulgated by the SCEOP. State agencies will also incorporate earthquake planning and procedures within their SOP so they may effectively execute those responsibilities when activated. Specifically, all state agencies shall perform the following activities:

1. Participate in earthquake planning and training, including full participation and attendance at scheduled exercises and meetings.

2. Coordinate emergency operations in support of local EOCs. Coordinate with ESF agency representatives, volunteer organizations, and local emergency managers to ensure a coordinated earthquake response.

3. Develop internal earthquake plans. State agencies must be prepared to rapidly mobilize their assigned resources and assets when a no-notice earthquake event occurs.

4. Assist with direction and control functions within their specific areas of responsibility.

5. Initiate automatic response actions identified in the Alert and Notification procedures in this plan.

6. Provide critical information with and among agencies in the SEOC as it is developed.

7. Coordinate and prioritize critical actions, including saving lives, protecting public health and safety, protecting property, establishing services to care for the population, and restoring critical services.

8. Identify critical needs and resource requirements and coordinate requests to meet those needs.

9. Continue to prepare for emergencies and disasters by conducting comprehensive assessments of the threats to the State and update emergency operations plans on an annual basis.

10. Participation in the preparation of an Incident Action Plan (IAP) to direct response actions and resource allocations.

11. Use the Earthquake Checklist that will be executed following a strong earthquake.

12. Use the Operational Area Concept to deploy resources into the affected area.

13. Use the Mass Transportation Evacuation Plan to transport disadvantaged-populations as required or directed.

14. Determine the extent of damage related in functional area and the operational capability of all related infrastructure.

15. Prepare, equip, and exercise applicable ESF RRT members.

E. Federal

Federal assistance is provided as directed by the President of the United States under the direction of FEMA and DHS, and in accordance with Federal emergency plans. They also identify and coordinate assistance under other Federal statutory authorities.

VI. ADMINISTRATION, LOGISTICS, AND FINANCE

A. General

Section VI. of the SCEOP outlines how the administration, logistics, and finance of this Appendix will be managed.

B. Logistics

1. In an earthquake scenario, nearly every routine resource channel, supply capability, and transportation system will be severely, if not totally, strained. Accordingly, providing resource support to the impacted area will be extremely challenging.

2. Regional Staging Areas (RSA) are identified in the SC Logistics Plan which is Attachment A to the SCEOP. Resources will be staged and distributed regionally according to the SC Logistics Plan. Resources may be delivered to the Operational Area Entry Points. Operational Area Entry Points are pre-identified locations where resources (equipment, supplies, personnel, etc.) will be received and later deployed within the operational areas. The entry points could be roadways, waterways, airports, and heliports within the operational area. These points of entry are situation dependent and could change due to the severity of the earthquake. See Annex 1, Transportation Services, Figure 1, Map of Entry Points.

VII. CONTINUITY OF GOVERNMENT (COG)

Section VII of the SCEOP describes the process and significance for the restoration and continuity of government following the impact of an earthquake. Local governments will need to rapidly respond to the needs of its citizenry. Plans and procedures must be

in place that allow for local governments to continue providing the vital essential functions required to assure the safety and security of lives and property.

VIII. CONTINUITY OF OPERATIONS (COOP)

Section VIII of the SCEOP describes the importance of continuing the essential missions of government. Plans and procedures for earthquake response and recovery operations at the local level must be in place that provide for the continuity of operations for immediate life safety and the security of property. Operations following the earthquake must continue to expedite the recovery of the local communities and the safe return of evacuated citizens.

IX. PLAN DEVELOPMENT AND MAINTENANCE

A. SCEMD Earthquake Program Manager will provide technical assistance to the appropriate officials about their responsibilities in earthquake planning.

B. SCEMD will be responsible for coordinating an annual review and update of the Earthquake Plan by all agencies involved. ESF agencies will make notification of necessary changes, as they occur to the Earthquake Program Manager for updating.

C. This plan will be updated to reflect lessons learned from exercises, improved response capabilities, and additional details developed through on-going planning. Annual review and update/revision will be completed no later than December of each year.

X. AUTHORITIES AND REFERENCES

See Section X. of the SCEOP for the authorities and references applicable to this Appendix.

XI. ACRONYMS AND GLOSSARY

A. Acronyms

ARC – American Red Cross

ARF – Action Request Form

B&CB - Budget and Control Board

CAP – Civil Air Patrol

CFR – Code of Federal Regulations

COG – Council of Government

CST – Civil Support Team

CULPH – Clemson University Livestock-Poultry Health

DCE – Federal Defense Coordinating Element

DCO – Defense Coordinating Officer

DFO – Disaster Field Office

DHS - Department of Homeland Security (Federal)

DEP&R - Directorate of Emergency Preparedness & Response (Federal)

DMAT - Disaster Medical Assistance Team (Federal)

DMORT - Disaster Mortuary Operational Response Team (Federal)

DOD – Department of Defense (Federal)

DPS - Department of Public Safety

EAS - Emergency Alert System

ECN - Emergency Communications Network

ECV - Emergency Communications Vehicle

EMAC - Emergency Management Assistance Compact

EOC - Emergency Operations Center

EPA – Environmental Protection Agency (Federal)

EQC – Environmental Quality Control

ESF - Emergency Support Function

ETA - Estimated Time of Arrival

ETV - Educational Television

FAA – Federal Aviation Administration (Federal)

FCO - Federal Coordinating Officer

FEMA - Federal Emergency Management Agency (DHS-EP&R) (Federal)

FRCC – Farrow Road Command Center

GETs – Government Emergency Telephone Services

GIS – Geographic Information System

HAZMAT – Hazardous materials

HAZUS - Hazards United States

HF – High Frequency

IAP – Incident Action Plan

IC – Incident Commander

ICP – Incident Command Post

ICS - Incident Command System

IMST – Incident Management Support Teams

IMAT – Incident Management Assist Teams (FEMA)

JISCC - Joint Incident Site Communications Capability

LART – Large Animal Rescue Team

LGR – Local Government Radio

LLR – Department of Labor, Licensing and Regulation

LSA - Logistical Staging Areas

LST – Landing ship tanks

LZ - Landing Zone

MERS - Mobile Emergency Response Support (Federal)

MHz – Megahertz

MMI – Modified Mercalli Intensity

MMO – Materials Management Office

MMRT – Midlands Medical Response Team

MOA – Memorandum of Agreement

MOU – Memorandum of Understanding

MPSSZ - Middleton Place-Summerville Seismic Zone

MRE – Meals Ready to Eat

NAWAS - National Warning System (Federal)

NDMS - National Disaster Medical System (Federal)

NEIC – National Earthquake Information Center

NIMS - National Incident Management System

NLSA – National Logistics Staging Area

NRF-CIA - National Response Framework, Catastrophic Incident Annex

NOAA - National Oceanic and Atmospheric Administration

OPCON - Operating Condition

OTAG – Office of The Adjutant General

OTG - Operations Tasking Group

PICS - Post-Impact Comfort Stations

PIO - Public Information Officer

POC – Points of Contact

RACES - Radio Amateur Civil Emergency Service

REM – Regional Emergency Manager

RNA - Rapid Needs Assessment Team (FEMA)

ROC - Region IV Operations Center (FEMA)

RRT - Rapid Response Team

SA – Salvation Army

SA – Staging Area

SACC - Southern Area Coordination Center

SAD – State Active Duty

SAFE – State Animal Fund for Emergencies

SAT - State Assessment Team

SCDC – SC Department of Corrections

SCDHEC – SC Department of Health and Environmental Control

SCDMH – SC Department of Mental Health

SCDNR – SC Department of Natural Resources

SCDOA – SC Department of Agriculture

SCDOC – SC Department of Commerce

SCDOE – SC Department of Education

SCDOI – SC Department of Insurance

SCDOT – SC Department of Transportation

SCDPS – SC Department of Public Safety

SCDSS – SC Department of Social Services

SCDOT – SC Department of Transportation

SCEMD - SC Emergency Management Division

SCEOP - SC Emergency Operations Plan

SCETV – SC Educational Television Network

SCFC – SC Forestry Commission

SCHP – SC Highway Patrol

SCNG – SC National Guard

SCORERP - SC Operational Radiological Emergency Response Plan

SCPPP – SC Probation, Parole and Pardon Services

SCPRT – SC Parks, Recreation and Tourism

SCTF-1 – SC Urban Search & Rescue Team

SCTRERP – SC Technical Radiological Emergency Response Plan

SEOC - State Emergency Operations Center

SERT - State Emergency Response Team

SLED – South Carolina Law Enforcement Division

SNPS – Strategic National Pharmaceutical Stockpile

SOP – Standard Operating Procedures

SRS – Savannah River Site

SSTV – Slow Scan TV

STOLS - Surface Towed Ordnance Location System

TAT – Technical Assistance Team (DHEC's HAZMAT TEAM)

UC – Unified Command

US&R - Urban Search and Rescue team (FEMA)

USCG – US Coast Guard (Federal)

VMAT - Veterinary Medical Assistance Team (Federal)

VOLTAG – Voluntary Technical Assistance Group

WP - Warning Point

B. Glossary

Aftershocks - Earthquakes that follow the largest shock of an earthquake sequence. They are usually smaller than the main shock.

Completely Destroy - Unusable for occupancy

Ground Motion - Vibration and shaking of the ground during an earthquake is the most far-reaching effect and causes the most damage to building infrastructures, lifelines, etc.

Epicenter - The location of the earth's surface that lies directly above the focus of an earthquake.

Focus - The point within the earth at which rupture commences and the earthquake originates.

HAZUS - Hazards United States (HAZUS) is a standardized geographic information system (GIS) based loss estimation tool to estimate potential losses from earthquakes, wind, and flood.

Intensity - A number (written as a Roman numeral) describing the severity of an earthquake in terms of its effects on the earth's surface and on humans and their structures. The best-known method for expressing intensity is the Modified Mercalli Scale.

Isoseismal - A contour or lines on a map representing points of equal intensity for a particular earthquake.

Long-Term Recovery - Focus on redeveloping communities and restoring the economic viability of the disaster area(s).

Liquefaction - The ground temporarily loses its strength and behaves as a viscous fluid (similar to quicksand) rather than a solid.

Magnitude - A number that characterizes the relative size of an earthquake. It measures the total amount of energy released during an earthquake.

Moderate Damaged (At) – A building requiring inspection before reuse.

Operational Area (OA) - Geographically isolated areas within a large disaster area. The operational areas are based on infrastructure damage/barriers, easily recognized geographic features, political boundaries, and population.

Operational Area Transportation Entry and Re-Entry Points. Pre-identified locations in an Operational Area where resources (equipment, supplies, personnel, etc.) will be received and later deployed within the area.

Rapid Response Team (RRT) - Specialized teams that provide detailed damage assessment and human service assistance within a specific Emergency Support Function (ESF).

Relocatable Facility - A mobile classroom, typically located on school property and used by students.

Seismicity - The geographic and historical distribution of earthquakes.

Seismic Zone - An area of seismicity probably sharing a common cause. Example: "Middleton Place-Summerville Seismic Zone (MPSSZ)."

Seismogram - A record written by a seismograph in response to ground motions produced by an earthquake.

Seismograph - A term that refers to the seismometer and its recording device as a single unit.

Seismometer - An instrument that detects and records the motion of the Earth's surface.

XII. ATTACHMENTS TO THE BASIC PLAN

Attachment A: Earthquake Checklist

Attachment B: Planning Scenario

Attachment C: Operational Area Planning

- Figure 1: Map of Operational Area Entry Points
- Table 1: Loss Estimation for Charleston, Berkeley, Dorchester, Beaufort, and Colleton Counties
- Table 2: Critical Resources Needs Assessment

Attachment D: Earthquake Intensity Scale

Attachment E: Earthquake Intensity Map

Attachment F: Earthquake Liquefaction Probability Map

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OPERATIONS INFORMATION OFFICER/ASSISTANT OPS INFORMATION OFFICER

Date/Time complete

1. _____ Announce SEOC operating condition and activate SCEOP to include this plan.

2. _____ As a follow-up procedure, request State Warning Point contact SERT members through REACH to inform of SEOC activation.

3. _____ Contact National Earthquake Information Center (NEIC), Boulder, Co., SC Seismic Network at University of SC (USC); and the College of Charleston to determine the earthquake epicenter and magnitude. Telephone numbers are maintained w/SC Warning Point. Information about earthquake can also be found on United States Geological Survey (USGS) web page: http://earthquake.usgs.gov/eqcenter/index.php

4. _____ Request ESFs implement all SOPs, Earthquake Checklists, and action plans for disaster response.

5. _____ Activate satellite communications system to contact emergency management counties.

6. _____ Request SERT ESFs obtain information in their respective areas on injuries, damages, and needs. Remind ESFs to use the Earthquake Checklist to assist in response actions.

7. _____ Request county desk officers contact emergency managers through the best available communications systems to determine most critical needs and worst-case situations with emergency managers.

8. _____ Request the Governor declares a State of Emergency and request a Presidential Declaration.

9. _____ Coordinate with EQ Program manager on checklists and tasks.

10. _____ Based on known event parameters, request ESF-5 to perform a HAZUS run to provide loss estimates on damages. (NOTE: HAZUS runs could possibly take four days to complete).

11. _____ Review previously prepared HAZUS scenario runs (M 7.3, 6.3, and 5.3) for the state and operational areas that will support the Governor's Request for a Presidential Declaration. (The HAZUS runs can be found in earthquake folder in the ESF-5 SEOC/OPS drive).

12. _____ Notify, mobilize, and deploy Operational Area Communications Teams. Appoint either a SCEMD liaison or Division of State Information Technology (DSIT) liaison to serve as point of contact for deployed teams.

13. _____ Notify ESF-1 Air Branch Operations to prepare helicopters and other aerial resources for reconnaissance to include reserving one aerial asset for Governor's fly-over.

14. _____ Notify DOD to prepare aerial assets for deployment.

15. _____ Review seismic reconnaissance list and identify priority missions.

16. _____ Request ESF-19 Eagle Vision Satellite System identify accessible and damaged areas.

17. _____ Coordinate with ESF-2 to establish radio frequency availability to communicate with county EOCs. Ensure emergency management organizations utilize assigned radio frequencies in accordance with ESF-2 guidance.

18. _____ Inform counties and Governor's Office that the SEOC is operational in conjunction with ongoing hazard specific notifications. Contact FEMA, Georgia Emergency Management Agency (GEMA), and NC Emergency Management Agency (NCEMA).

19. _____ Implement Operational Area Concept for response and recovery.

20. _____ Request ESF-1 and ESF-16 review transportation situation and determine if any routes into the disaster area are usable.

21. _____ Meet with SERT representatives to determine worst-case situations based on known information from county emergency managers and representatives in the field to include the status of available resources in the area.

22. _____ Direct ESF-5 to prepare an Incident Action Plan (IAP) and include the following initial response actions as part of the Incident Action Plan (IAP) incident objectives:

    - Communications Teams: Determine the locations where communications teams will be dispatched to establish communications in the impacted area.

- Transportation Assessment: Determine if routes in the expected impacted areas are usable.
- Search and Rescue efforts: Determine the locations to begin search and rescue of victims trapped in collapsed structures and locations to direct firefighting efforts to the most essential facilities and control the spread of fires.
- Medical Care: Determine locations to establish medical treatment triages.
- Mass Care: Determine locations to provide basic human needs (food and water).
- HAZMAT: Determine locations of HAZMAT facilities to begin inspecting and controlling the level of HAZMAT release.
- Determine locations and status of commercial airports to support air response operations.
- Determine areas to provide law enforcement for the public safety of citizens.

23. _____ Notify FEMA Region IV and request support of the following special response teams and resources:

- Rapid Needs Assessment Teams
- Incident Management Teams (IMTs)
- US&R Task Force
- MERS Units.
- NDMS
- DMORT
- IRR Packages

24. _____ Request mobilization and deployment of ESF RRTs to include equipment and supplies. Request ESF-1 to assist with transportation requests as needed.

25. _____ Request ESF-19 to provide information on military resource availability.

26. _____ Request PIO to issue public information statements.

27. _____ Alert EMAC POC for mutual aid coordination. EMAC Advance Team(s) should be requested.

28. _____ Request the POC of nuclear facilities, dams, and military installations to provide probable damage estimates.

29. _____ Identify locations to deploy SAT.

30. _____ Prepare ECV for deployment, and determine availability of mobile communications vehicles from unaffected counties.

31. _____ Request mobile communications vehicles from unaffected sources for deployment.

~~32.~~ _____ Review Critical Resource Needs Database, coordinate with respective ESF on resource needs, and request critical resources to support the disaster. See Table 2, Attachment C of this Annex.

33. _____ Request ESF 19 mobilize Civil Support Team (CST) for possible deployment to assist ESF-10 if needed.

34. _____ Implement SC Logistics Plan.

35. _____ Implement SC Catastrophic Incident Response Plan (if applicable).

36. _____ Request SCPRT to provide tourist occupancy rates and tourist populations in the impacted areas.

37. _____ Remind ESFs to remove critical equipment and supplies stored in damaged facilities to prevent further damage or deterioration due to aftershocks and/or weather exposure.

I. PLANNING SCENARIO

A. The earthquake planning scenario used to develop this plan is based on the 2001 Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina. The scenario is similar to the 1886 Charleston earthquake that impacted the entire state. The accepted magnitude of the 1886 earthquake is M 7.3 and was intensity X on the Modified Mercalli Scale. This earthquake was the most severe earthquake to occur on the Eastern seaboard.

B. The earthquake used in this plan is a possible worst case scenario. A magnitude 7.3 earthquake occurring at the epicenter of the Charleston 1886 earthquake would affect the entire state with most of the destruction and damage occurring within a 100+ mile radius from the epicenter. Most buildings, including schools, hospitals, and fire stations will suffer significant damage.

C. The findings from the Comprehensive Seismic Risk and Vulnerability Study highlight several critical factors that have important implications for earthquake risk reduction, planning, preparedness, emergency response, and disaster recovery. The Study revealed the following worst-case for South Carolina from an earthquake similar to the M 7.3, 1886 event:

1. A daytime event will cause the highest number of casualties. Of the total estimated 45,000 casualties, approximately 91% will be injuries requiring medical attention, 3% will require hospitalization, and 6% will be fatalities.

2. Nearly 70,000 households or about 200,000 people would be displaced. Of these, approximately 60,000 people will seek temporary public shelter. These numbers could rise in the weeks following the earthquake as weakened structures continue to fail.

3. Total economic losses from damage to buildings, direct business interruptions losses, and damage to transportation and utility systems would exceed $20 billion.

4. Over 400 schools (K-12) will experience at least moderate damage.

5. Approximately 100 fire stations will experience at least moderate damage.

6. Approximately 9 million tons of debris will be generated.

7. Of the 108 hospitals statewide, 20 will experience at least moderate damage greater than 50% with most of the damaged hospitals in the low-country.

8. Must be prepared for up to 60 ignition sites that could cause major fire damage.

9. Approximately 600 bridges are expected to suffer structural damage, rendering many of them unusable.

10. A significant portion of the Berkeley, Charleston and Dorchester area is susceptible to liquefaction. However, ground failure effects contribute about 5% or less to losses.

11. Electric power facilities will suffer damage and about 670,000 households will be without power day one following the earthquake.

12. Day one following the event, approximately 160,000 households will be deprived of water. It could take weeks, possibly months, to fully restore the water systems.

13. Approximately 60% of the displaced households will have pets requiring medical care and sheltering. In addition, a large number of horses and livestock will be affected, both by injury, and by food/water deprivation.

14. The affected counties can expect to have animal carcasses for disposal and follow-up care for the remaining live animals.

I. OPERATIONAL AREA

A. Although not all counties have identified operational areas, SCEMD will utilize the Operational Area Concept for response and recovery as much as possible. Operational Areas allow for deployment of response assets to areas that will be isolated as a result of severe transportation infrastructure damage. Most operational areas will initially only be accessible by air or sea. For detailed information on the Operational Area Concept refer to Annex 4 in the Catastrophic Incident Response Plan.

B. In the Operational Areas the affected infrastructure from a strong earthquake will include: transportation arteries, communications, public works and engineering outlets, firefighting resources, shelters, health and medical facilities, HAZMAT sites, energy providers, law enforcement facilities, animal care facilities, special needs requirements, and governments.

C. There are a total of 30 operational areas for Charleston, Berkeley, Dorchester, Beaufort, and Colleton counties. Each Operational Areas is composed of one or more census tracts to enable SCEMD to conduct earthquake loss estimation modeling and baseline disaster needs assessments. An earthquake similar to the Charleston August 31, 1886 event will significantly impact the State's infrastructure. In order to determine the effects an M 7.3 could have on infrastructure, a worst-case loss estimation table was prepared for Berkeley, Charleston, Dorchester, Beaufort, and Colleton operational areas to provide emergency responders site-specific information. See Table 1 of this Attachment for the loss estimation of the above-mentioned counties.

D. As anticipated in an earthquake, there may be an initial shortage of available critical resources. As a result, daily local IAPs from the IC will be required to address prioritizing the distribution of scarce response resources as categorized by Operational Area. Resource needs anticipated immediately after an earthquake includes food, bottled water, cots, blankets, fuel, and heavy equipment. See Table 2, Critical Resource Needs Assessment of this Attachment.

E. Multiple Regional Staging Area (RSA) may be set up outside the disaster area. Resources will be staged and distributed regionally according to the SC Logistics Plan. They may not be operational until 72 hours after the earthquake.

F. Each operational area may be required to work independently until routes area surveyed for damage and cleared of debris.

G. Traffic Management will include diversion routes to move traffic around blocked priority roadways and access routes to move into and within Operational Areas. Although SCDOT has pre-identified primary and alternate

inspection routes for earthquake prone counties, these routes are situation dependent. After the event and in coordination with the appropriate county officials, ESF-1 will select the proper routing to and from operational areas based on known route conditions.

H. Operational Area entry points are identified based on the premise that initial entry into the most severely impacted Operational Areas will only be by air and sea or indirect land routes until primary entry routes are cleared of debris. To facilitate operations under such conditions, counties are encouraged to identify and develop protocols for helicopter landing/pick up zones and potential drop zones to receive initial material and equipment. Counties also need to identify areas and develop protocols for large-scale helicopter / fixed wing airhead operations. Air space coordination and requirements will be coordinated though ESF-1, Transportation (Air Branch).

I. The communications operation for an earthquake will be based on a prioritized and time-phased communications plan to support multiple communications locations within the operation. Due to the uniqueness of an earthquake response, a specific deployment response is prepared. For more information on the earthquake communications response, see Annex 2, Communications, Attachment B of this plan.

II. LOSS ESTIMATION

A. FEMA HAZUS was used to develop the loss estimation. The primary purpose of HAZUS is to provide a methodology and software application to develop loss estimations from Statewide to census scale. Due to uncertainties inherent in any loss estimation technique, there may be differences between the modeled results contained in Table 1 and the actual social and economic losses following a specific earthquake. A specific limitation to HAZUS is the tourist population, which is not clearly accounted for in the loss estimates. If a strong earthquake were to occur in the summer, the losses could be significantly higher. Although no loss estimation will prove completely accurate, it can provide potential damage patterns, and the conceivable damage conclusions will provide guidelines for emergency response planning. The loss estimation contained in this section is based on the M 7.3 event which is the worst-case scenario for South Carolina.

B. Table 1 includes loss estimates from operational areas in Charleston, Berkeley, Dorchester, Beaufort, and Colleton counties. As more HAZUS data becomes available, additional counties will be included in the loss estimation.

C. Table 2 is the Critical Needs Assessment. The Critical Needs Assessment lists estimates on which to base the State's resource requirements following a strong earthquake. The projected requirements were based on the loss

estimation tables for Berkeley, Charleston, Dorchester, Beaufort, and Colleton counties.

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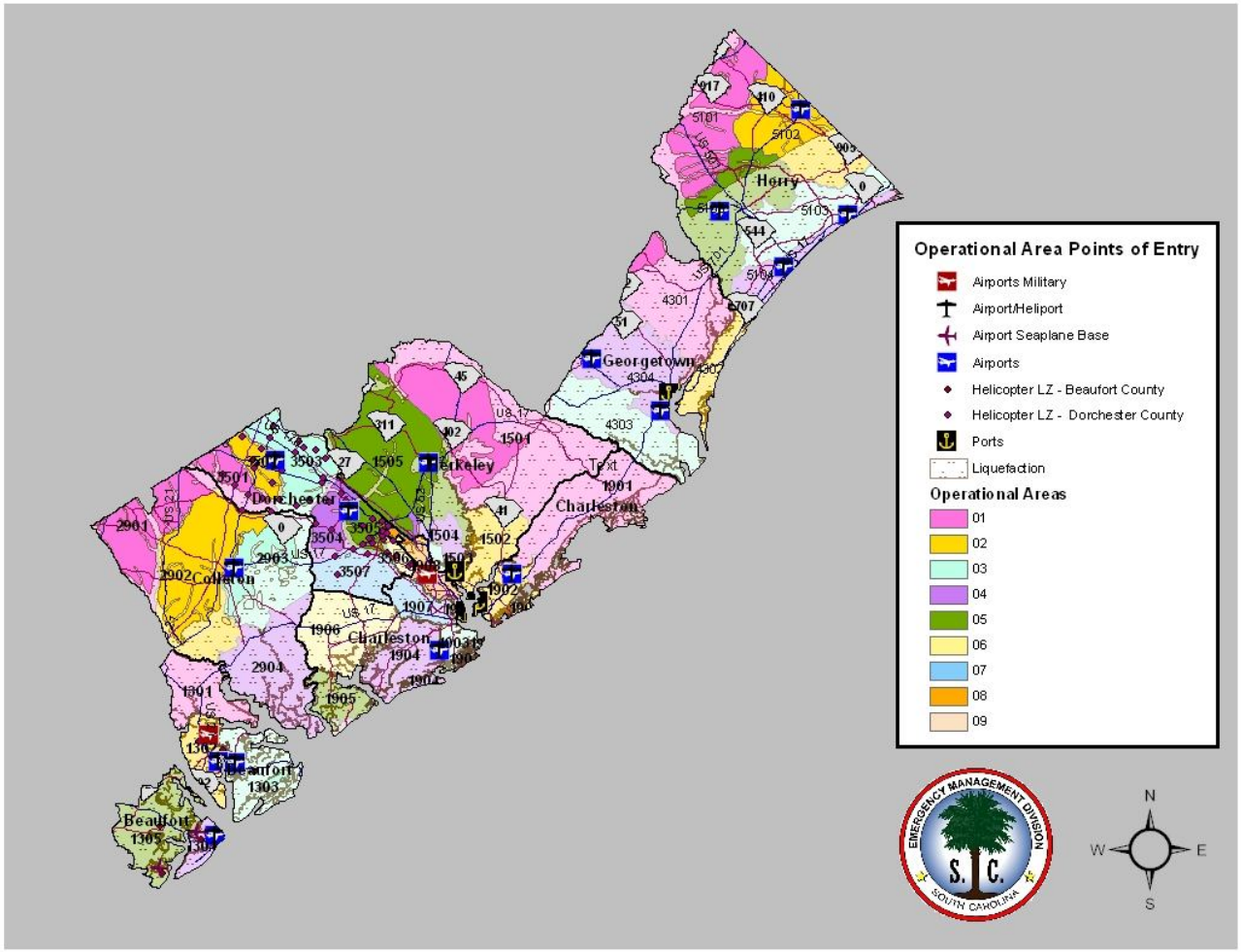
Figure 1 - OPERATIONAL AREA ENTRY POINTS

The Operational Area Entry Points are pre-identified locations where resources (equipment, supplies, personnel, etc.) will be received and later deployed within the operational areas. The entry points could be roadways, waterways, airports, and heliports within the operational area. These entry points are situation dependent and could change due to the severity of the earthquake. For a list of entry points and routes, see Annex 1, Attachment C of this plan.



OPERATIONAL AREA MAPS and TABLES

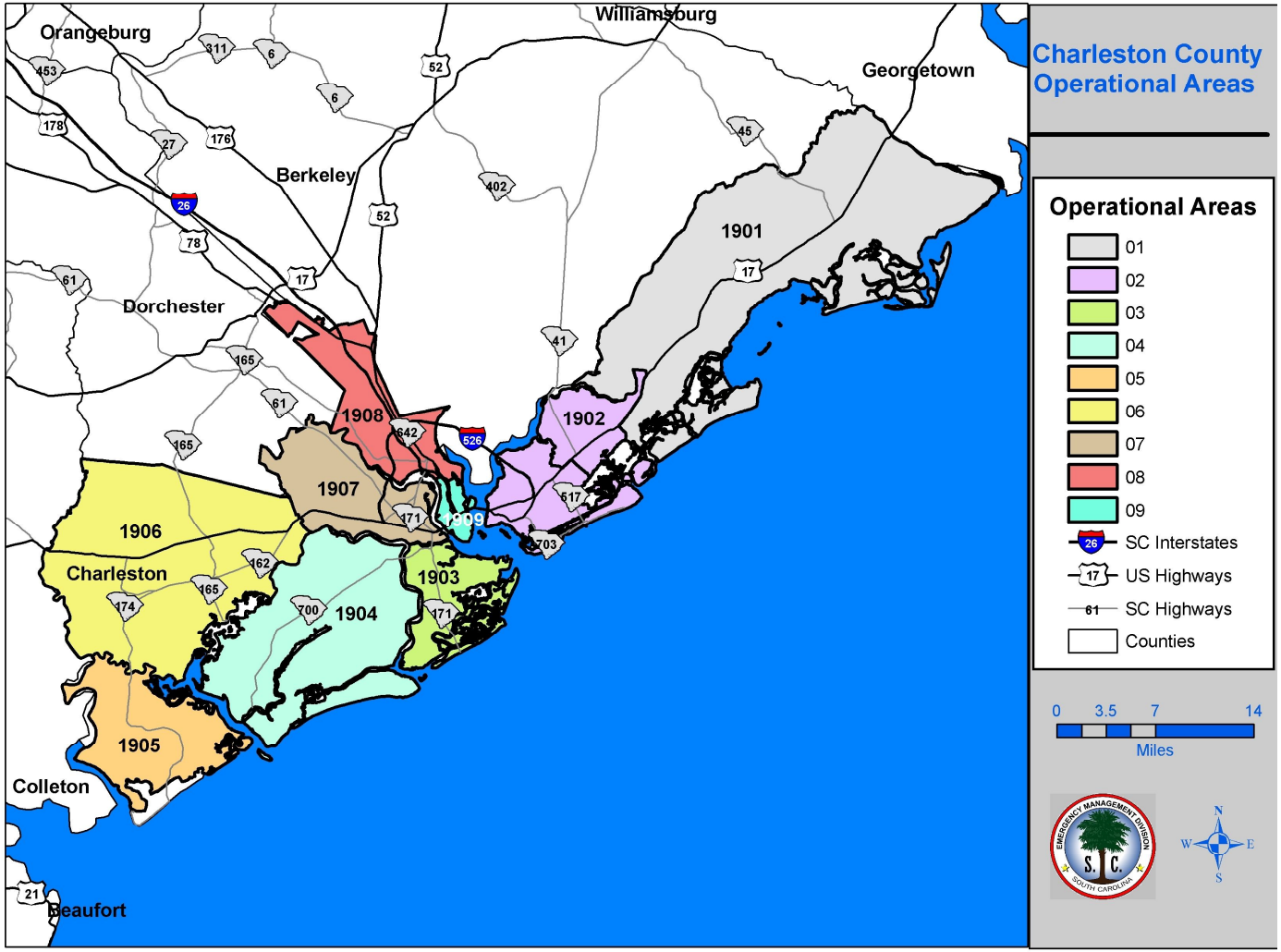
A. The maps in the following section depict the Operational Areas in Berkeley, Charleston, Dorchester, Beaufort, and Colleton counties.

B. The Tables following the maps depict the worst-case loss estimates requirements developed for each Operational Area. HAZUS-MH was used to develop the loss estimates and formed the basis for the human needs requirements.

C. The majority of the data below was developed using the 2008 projected U.S. Census estimates. Essential facility loss estimates and hazardous material sites are based on 2000 HAZUS data and are so marked.

D. Information contained in the Tables should be used to develop initial response / support plans which will form the planning basis for actual, real-time response/support planning.

CHARLESTON COUNTY



OPERATIONAL AREA DESCRIPTIONS

COUNTY: CHARLESTON COUNTY			
COUNTY CODE: Chas			
CountyID	**FIPS**	**Location**	**Description/Boundary**
Chas-1	1901	McClellanville	North boundary is county line, south boundary is Steed Creek Rd and Doar Rd Divide at Bulls Bay. Includes towns of McClellanville and Awendaw.
Chas-2	1902	Mt. Pleasant/Awendaw	North boundary divides at Bull Bay, west boundary is the Wando River and south boundary is the Cooper River. Includes the towns of Mt. Pleasant, Awendaw, Isle of Palms and Sullivans Island.
Chas-3	1903	James Island / Folly Beach	North boundary is Wappoo Creek, east and southern boundary is the Atlantic, and the west boundary is the Stono River. Includes Folly Beach area.
Chas-4	1904	Johns Island	North and east boundary is the Stono River, south boundary is the Atlantic, and west boundary is the North Edisto River.
Chas-5	1905	Edisto Island	Includes the entire island as bounded by the Edisto and North Edisto Rivers.
Chas-6	1906	Hollywood / Ravenel	North boundary is county line, south boundary is Dawho River, west boundary is the Edisto River, and east boundary is Wadalaw River. Includes towns of Hollywood, Ravenel, and Meggett.
Chas-7	1907	West Ashley / St. Andrews	North boundary is county line and is between Stono and Ashley Rivers. South boundary is the Wappoo Creek. No cities / towns located in this Operational Area.
Chas-8	1908	Peninsula North	East boundary is the Cooper River; west boundary is the Ashley River. Includes the City of Charleston, North area, Lincolnville and N. Charleston.
Chas-9	1909	Peninsula South	Pittsburgh Ave and Meeting Street/King St. Extension north up King St. Extension to where it intersects with I-26 West to the Ashley River between Rhodia and Osprey Place Apartments. Boundary follows the two cities boundaries.

Charleston County Category	Charleston Description	Operational Area 1901 (1%)	Operational Area 1902 (20%)	Operational Area 1903 (11%)	Operational Area 1904 (5%)	Operational Area 1905 (.5%)	Operational Area 1906 (4%)	Operational Area 1907 (19.5%)	Operational Area 1908 (27.49%)	Operational Area 1909 (11.51%)	County Total
Demographics	Population	3,399	67,977	37,387	16,994	1,699	13,595	66,277	93,434	39,121	339,883
	Total Households	1,351	27,033	14,868	6,758	675	5,406	26,357	16,259	34,422	133,129
Additional Demographic Information	Age 65 or older	643	7,435	4,287	1,926	196	1,608	7,744	9,166	6,111	39,116
	Non English Speaking HH	352	4,122	2,345	1,056	107	880	4,235	5,014	3,343	21,454
	Homeless	55	644	366	165	17	137	662	784	522	3,352
	HH w/o Transportation	103	1,204	686	308	31	257	1,237	1,465	976	6,267
	Disabled	1,221	14,287	8,134	3,662	372	3,051	14,691	17,392	11,595	74,405
Initial Shelter	Displaced Households	9	2,951	2,504	1,339	18	988	8,353	11,024	4,503	31,689
	Total Persons per H/H (2.4 people per H/H) displaced	22	7,082	6,009	3,213	44	2,371	20,047	26,458	10,807	76,053
	Remaining HH Sheltered In Place	1,342	24,082	12,364	5,419	657	4,418	18,004	5,235	29,919	101,440
	Total Persons Sheltered-In Place	3,221	57,797	29,674	13,006	1,576	10,604	43,209	12,564	71,806	243,457
	# of Persons Seeking Short-term ARC shelter	2	626	609	352	5	299	2,104	3,545	1,448	8,990
Animal Response	# of pets needing shelter	1	163	158	92	1	78	547	922	376	2,338

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Attachment C to Basic Plan
Operational Area Planning
Table 1

Charleston County Needs Assessment	Description	Operational Area 1901 (1%)	Operational Area 1902 (20%)	Operational Area 1903 (11%)	Operational Area 1904 (5%)	Operational Area 1905 (.5%)	Operational Area 1906 (4%)	Operational Area 1907 (19.5%)	Operational Area 1908 (27.49%)	Operational Area 1909 (11.51%)	County Total
Drinking Water: 3 liter bottle per person per day	ARC Sheltered	3,399	67,977	37,387	16,994	1,699	13,595	66,277	93,434	39,121	339,883
	Total Persons Sheltered in Place	9,662	173,390	89,023	39,018	4,729	31,812	129,628	37,692	215,417	730,371
	Emergency Workers (10% of displaced persons)	7	2,125	1,803	964	13	711	6,014	7,937	3,242	22,816
	Total Liters of water per day	13,067	243,492	128,213	56,976	6,441	46,118	201,920	139,063	257,779	1,093,069
Meals (2 meals per day)	ARC Sheltered	4	1,253	1,218	704	10	597	4,208	7,090	2,896	17,981
	Total Persons Sheltered in Place	6,441	115,594	59,349	26,012	3,153	21,208	86,419	25,128	143,611	486,914
	Emergency Workers (10% of displaced persons)	4	1,416	1,202	643	9	474	4,009	5,292	2,161	15,211
	Total Meals Per Day	6,450	118,263	61,769	27,359	3,171	22,279	94,636	37,510	148,669	520,105
Ice = 8 lb. Bag daily (1 bag per person)	ARC Sheltered	2	626	609	352	5	299	2,104	3,545	1,448	8,990
	Total Persons Sheltered in Place	3,221	57,797	29,674	13,006	1,576	10,604	43,209	12,564	71,806	243,457
	Emergency Workers (10% of displaced persons)	2	708	601	318	4	237	2,005	2,646	1,081	7,602
	Total Bags of Ice per Day	3,225	59,131	30,884	13,676	1,586	11,139	47,318	18,755	74,334	260,049
Generators	1 per 385 ARC sheltered	1	1	1	1	1	1	5	9	4	25
Portable Toilets	1 per 15 ARC sheltered	1	42	41	23	1	20	140	236	97	601

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Charleston County Category	Description	Operational Area (1901)	Operational Area (1902)	Operational Area (1903)	Operational Area (1904)	Operational Area (1905)	Operational Area (1906)	Operational Area (1907)	Operational Area (1908)	Operational Area (1909)	County Total
Essential Facilities	#Police Stations Total	0	4	1	0	2	1	0	1	3	12
	Probability of at Least Moderate Damage >50%	0	4	1	0	2	1	0	1	3	12
	#Schools Total	3	15	6	10	2	9	14	35	21	115
	Probability of at Least Moderate Damage >50%	1	12	6	10	2	9	13	33	21	107
	# Hospitals Total	0	1	0	0	0	0	1	3	7	12
	Probability of at Least Moderate Damage >50%	0	1	0	0	0	0	1	3	7	12
	# Fire Stations Total	5	9	7	6	1	4	8	12	6	58
	Probability of at Least Moderate Damage >50%	3	9	7	6	1	4	8	12	6	56
Utilities	# Potable Water Pipeline Leaks	0	5	5	2	138	4	16	31	0	201
	# Potable Water Pipeline Breaks	0	1	1	1	34	1	4	8	0	50
	# Electrical Power Facilities	0	1	0	0	0	0	24	6	0	31
	# Electrical Power Facilities Damaged	0	0	0	0	0	0	0	0	0	0
	# Waste Treatment Plants	2	116	65	8	0	8	102	36	7	344
	# Waste Treatment Plants Damaged	0	0	0	0	0	0	0	0	0	0
	# Communica-tion Facilities	1	6	0	0	0	0	9	2	6	24
	# Communica-tion Facilities Damaged	0	0	0	0	0	0	9	2	6	17

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Attachment C to Basic Plan
Operational Area Planning
Table 1

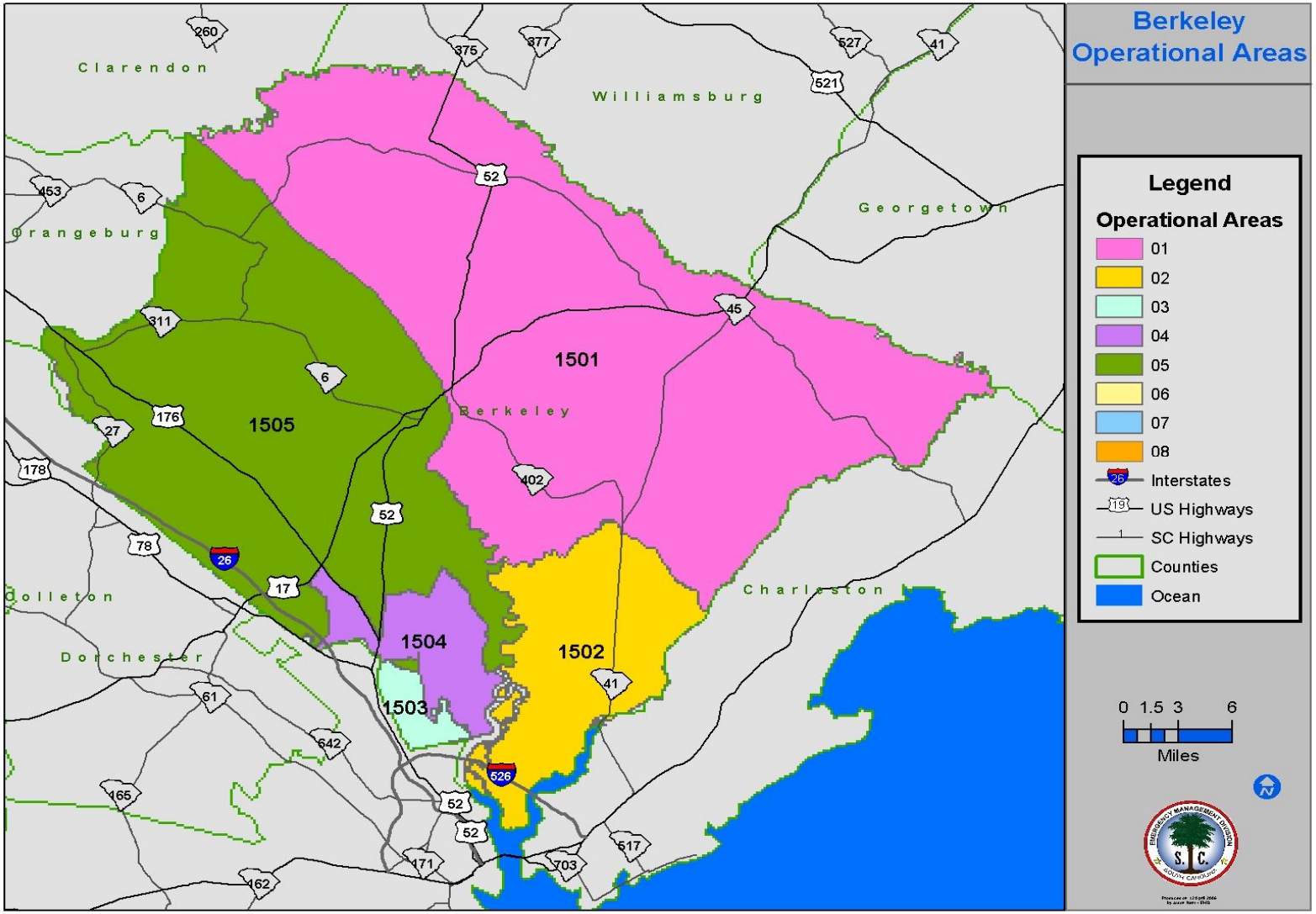
Charleston County Category	Description	Operational Area (1901)	Operational Area (1902)	Operational Area (1903)	Operational Area (1904)	Operational Area (1905)	Operational Area (1906)	Operational Area (1907)	Operational Area (1908)	Operational Area (1909)	County Total
Transporta-tion	# Bridges	18	35	9	33	3	32	37	122	43	332
	# Bridges Damaged	18	35	6	26	0	0	16	70	35	206
	# Airports	0	1	0	1	0	0	0	1	0	3
	# Airports Damaged	0	0	0	0	0	0	0	1	0	1
	# Rail Facilities	0	0	0	0	0	0	0	2	0	2
	# Rail Facilities Damaged	0	0	0	0	0	0	0	0	0	0
Inventory of Hazardous Materials Sites		17	145	74	46	8	57	194	806	329	1,676
Debris	Total Weight (in tons)	38,716	1,446,280	623,527	393,019	24,622	195,089	1,545,142	4,444,785	1,432,202	10,143,382
Fire	# of Potential Fires	0	5	3	2	0	1	4	4	0	19
Casualties	Day Event										
	2 p.m.										
	-Minor	5	856	407	299	14	256	1,495	3,529	1,512	8,374
	-Major	1	282	138	103	5	89	523	1,245	533	2,919
	-Deaths	0	70	34	25	1	22	133	323	138	608
	Night Event										
	2 a.m.										
	-Minor	11	574	438	326	12	336	1,439	2,379	1,020	6,536
	-Major	2	164	129	95	3	93	444	751	322	2,005
	-Deaths	0	31	31	16	0	13	87	154	66	398
	Commuting Event										
	5 p.m.										
	-Minor	8	699	408	294	11	249	1,424	2,867	1,229	7,188
	-Major	2	272	145	224	4	92	562	1,178	505	2,984
	-Deaths	0	57	32	25	1	19	122	263	113	631

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Charleston County Category	Description	Operational Area (1901)	Operational Area (1902)	Operational Area (1903)	Operational Area (1904)	Operational Area (1905)	Operational Area (1906)	Operational Area (1907)	Operational Area (1908)	Operational Area (1909)	County Total
Power Outage	Total # of Households	1,351	27,033	14,868	6,758	675	5,406	26,357	16,259	34,422	133,129
	Day 1	0	726	6,072	5,077	549	4,382	0	1,599	0	18,404
	Day 30	0	7	178	343	22	445	0	30	0	1,024
Water Shortage	Day 1	0	0	0	0	93	0	0	0	0	93
	Day 30	0	0	0	0	0	0	0	0	0	0
Residential Damage	Total # of Households	1,351	27,033	14,868	6,758	675	5,406	26,357	16,259	34,422	133,129
	Moderately damaged	426	5,903	3,226	2,463	259	1,342	5,343	5,996	2,569	27,526
	Severely damaged	149	1,713	963	1,156	158	1,088	1,934	3,224	1,381	11,767
	Completely Destroyed	25	2,477	1,891	2,564	67	3,566	5,348	7,941	3,403	27,282

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

BERKELEY COUNTY



OPERATIONAL AREA DESCRIPTIONS

COUNTY: BERKELEY			
County/ID	**FIPS Code**	**Location**	**Boundary**
Berk-01	1501	Berkeley Northeast	North and east boundaries are bounded by county line and east side of the Diversion Canal. South Boundary stops before Daniel Island incorporated areas. West boundary is West Branch tributary to the Cooper River. Includes the towns of St. Stephen, Bonneau, and Jamestown.
Berk-02	1502	Berkeley South	Daniels Island and Incorporated areas.
Berk-03	1503	Hanahan	Town of Hanahan and incorporated areas.
Berk-04	1504	Goose Creek	City of Goose Creek, US Naval Weapon Station, and incorporated areas.
Berk-05	1505	Berkeley Northwest	East boundary is bounded by the west side of the Diversion Canal and Lake Marion. North and west boundaries are bounded by county line, south boundary ends before City of Goose Creek incorporated areas. Includes the town of Moncks Corner.

Attachment C to Basic Plan
Operational Area Loss Planning
Table 1

Berkeley County Category	Description	Operational Area 1501 (14%)	Operational Area 1502 (3.25%)	Operational Area 1503 (14.77%)	Operational Area 1504 (26.76%)	Operational Area 1505 (41.22%)	County Total
Demographics	Population	21,788	5,058	22,987	41,647	64,152	155,632
	Total Households	7,611	1,767	8,030	14,548	22,409	54,365
	Age 65 or older	1,956	454	2,064	3,739	5,759	13,972
Additional Demographic Information	Non English Speaking HH	1,282	298	1,353	2,451	3,775	9,159
	Homeless	217	50	229	415	640	1,551
	HH w/o Transportation	406	0	429	777	1,196	2,808
	Disabled	4,825	1,120	5,090	9,222	14,206	34,463
Initial Shelter	Displaced Households	512	32	2,643	3,740	5,710	12,636
	Total Persons (2.75 people per H/H) displaced	1,408	87	7,268	10,284	15,701	34,748
	Remaining HH Sheltered-In Place	7,099	1,735	5,387	10,808	16,700	41,729
	Total Persons Sheltered-In Place	19,523	4,772	14,813	29,723	45,924	114,756
	# of Persons Seeking Short-term ARC shelter	148	8	635	868	1,417	3,075
Animal Response	# of pets needing shelter	39	2	165	226	368	800

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Berkeley County Needs Assessment	Description	Operational Area 1501 (14%)	Operational Area 1502 (3.25%)	Operational Area 1503 (14.77%)	Operational Area 1504 (26.76%)	Operational Area 1505 (41.22%)	County Total
Drinking Water: 3 liter bottle per person per day	ARC Sheltered	444	23	1,905	2,604	4,250	9,226
	Total Persons Sheltered in Place	58,569	14,316	44,440	89,170	137,772	344,267
	Emergency Workers (10% of displaced persons)	422	26	2,180	3,085	4,710	10,424
	Total Liters of water per day	59,436	14,365	48,525	94,859	146,733	363,917
Meals (2 meals per day)	ARC Sheltered	296	15	1,270	1,736	2,834	6,151
	Total Persons Sheltered in Place	39,046	9,544	29,627	59,446	91,848	229,511
	Emergency Workers (10% of displaced persons)	282	17	1,454	2,057	3,140	6,950
	Total Meals Per Day	39,624	9,577	32,350	63,239	97,822	242,612
Ice = 8 lb. Bag daily (1 bag per person)	ARC Sheltered	148	8	635	868	1,417	3,075
	Total Persons Sheltered in Place	19,523	4,772	14,813	29,723	45,924	114,756
	Emergency Workers (10% of displaced persons)	141	9	727	1,028	1,570	3,475
	Total Bags of Ice per Day	19,812	4,788	16,175	31,620	48,911	121,306
Generators	1 per 385 ARC sheltered	1	1	2	2	4	10
Portable Toilets	1 per 15 ARC sheltered	10	1	42	58	94	206

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Attachment C to Basic Plan
Operational Area Planning
Table 1

Berkeley County Category	Description	Operational Area (1501)	Operational Area (1502)	Operational Area (1503)	Operational Area (1504)	Operational Area (1505)	County Total
Essential Facilities	#Police Stations Total	0	0	1	0	2	3
	Probability of at Least Moderate Damage >50%	0	0	1	0	2	3
	#Schools Total	13	4	6	24	24	71
	Probability of at Least Moderate Damage >50%	13	4	6	24	24	71
	# Hospitals Total	0	0	0	0	0	0
	Probability of at Least Moderate Damage >50%	0	0	0	0	0	0
	# Fire Stations Total	13	4	2	3	13	35
	Probability of at Least Moderate Damage >50%	13	4	2	3	13	35
Utilities	# Potable Water Pipeline Leaks	0	81	2	30	16	129
	# Potable Water Pipeline Breaks	0	20	1	97	50	168
	# Electrical Power Facilities	3	0	2	1	2	8
	# Electrical Power Facilities Damaged	0	0	0	0	0	0
	# Waste Treatment Plants	8	0	28	31	62	129
	# Waste Treatment Plants Damaged	0	0	0	31	62	93
	# Communication Facilities	1	0	0	1	1	3
	# Communication Facilities Damaged	0	0	0	1	1	2

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Berkeley County Category	Description	Operational Area (1501)	Operational Area (1502)	Operational Area (1503)	Operational Area (1504)	Operational Area (1505)	County Total
Transportation	# Bridges	58	30	6	6	83	183
	# Bridges Damaged	31	19	5	6	75	136
	# Airports	0	0	0	0	1	1
	# Airports Damaged	0	0	0	0	1	1
	# Rail Facilities	0	0	0	0	0	0
	# Rail Facilities Damaged	0	0	0	0	0	0
Inventory of Hazardous Materials Sites		98	33	61	76	255	523
Debris	Total Weight (in tons)	71,600	37,768	228,128	514,769	771,699	1,623,964
Fire	# of Potential Fires	2	0	2	4	7	15
Casualties	Day Event						
	2 p.m.						
	-Minor	102	72	281	626	1,240	2,322
	-Major	30	23	99	221	435	808
	-Deaths	7	5	24	54	107	197
	Night Event						
	2 a.m.						
	-Minor	159	28	474	1,061	1,459	3,181
	-Major	39	8	145	327	423	941
	-Deaths	5	1	28	63	69	167
	Commuting Event						
	5 p.m.						
	-Minor	101	64	378	805	1,333	2,681
	-Major	33	47	179	309	744	1,311
	-Deaths	5	8	35	65	131	244

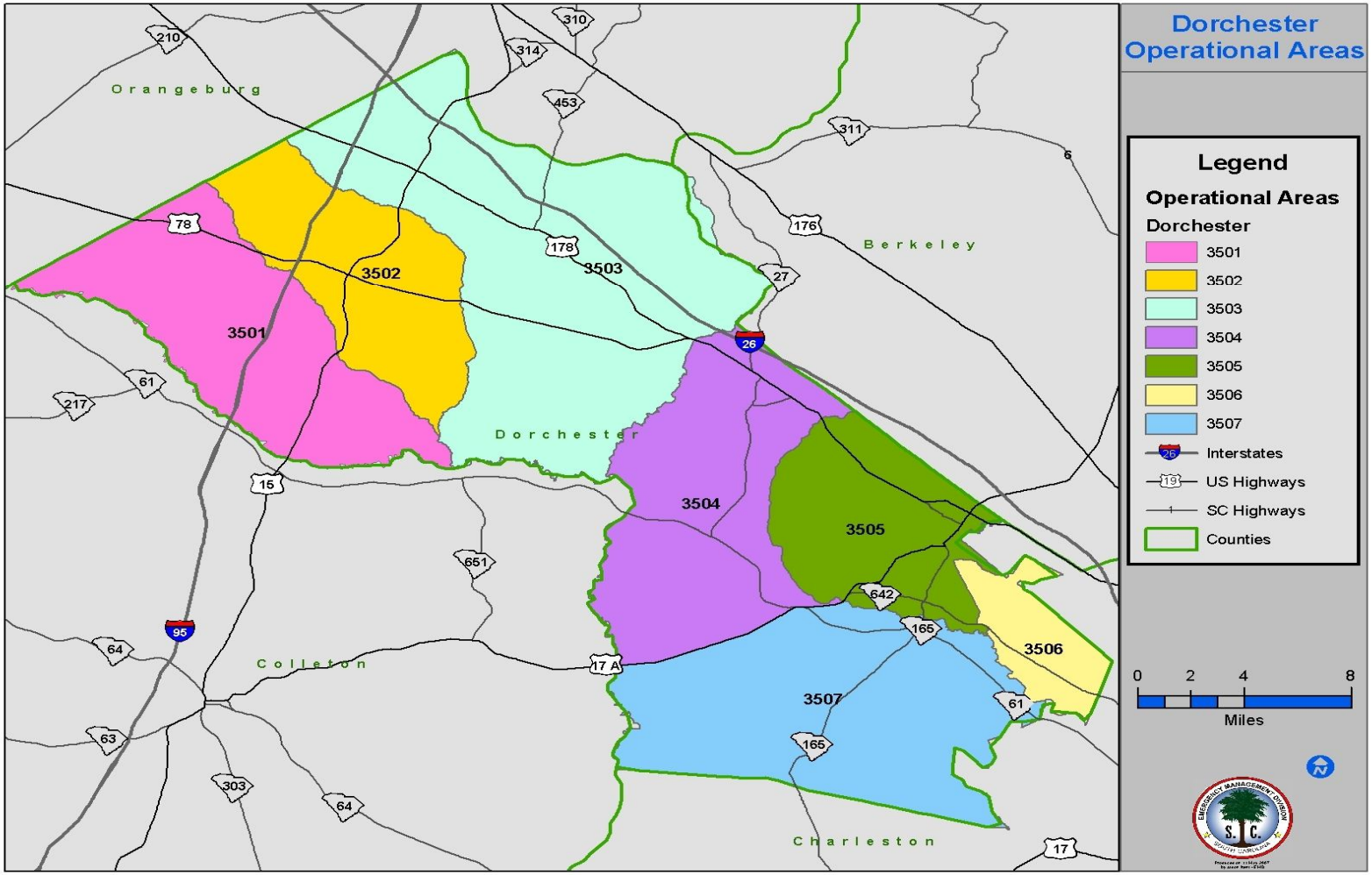
NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Berkeley County Category	Description	Operational Area (1501)	Operational Area (1502)	Operational Area (1503)	Operational Area (1504)	Operational Area (1505)	County Total
Power Outage	Total # of Households	7,611	1,767	8,030	14,548	22,409	54,365
	Day 1	0	0	1,789	11,242	18,273	31,304
	Day 30	0	0	47	1,139	2,093	3,279
Water Shortage	Day 1	0	0	0	8,575	9,877	18,452
	Day 30	0	0	0	0	0	0
Residential Damage	Total # of Households	7,611	1,767	8,030	14,548	22,409	54,365
	Moderately damaged	2,766	482	1,617	3,997	7,252	16,114
	Severely damaged	1,416	267	772	1,268	3,394	7,117
	Completely Destroyed	773	110	1,652	4,373	7,137	14,046

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

DORCHESTER COUNTY



OPERATIONAL AREA DESCRIPTIONS

COUNTY NAME: DORCHESTER			
COUNTY CODE: Dorc			
County/ID	**FIP e**	**Location**	**Boundary**
Dorc-1	3501	Grover/Reevesville	North boundary separated by county line. West boundary is Edisto River. The East boundary is the Polk Swamp Tributary. Includes the Grover community.
Dorc-2	3502	St. George	North boundary separated by county line. West boundary is the Polk Swamp Tributary. East and South boundary areas are the Indian Field Swamp tributary. Includes the town of St. George.
Dorc-3	3503	Harleyville/ Rosinville	North and East boundaries are separated by county line. West boundary is the Indian Field Swamp tributary. The south boundary is the Four Hole Swamp tributary. Includes the towns of Harleyville and Reevesville.
Dorc-4	3504	Ridgeville/Givhans	Bounded by Four Hole Swamp to the north, south by US 17A, east by the Great Cypress Swamp, and west by county line. Includes the towns of Givhans and Ridgeville.
Dorc-5	3505	Summerville/ Ladson	Bounded by the Great Cypress Swamp to the north, Ashley River to the west, county line to the east, and south boundary is SR 230. Includes the town of Summerville and communities of Knightsville and Jedburg.
Dorc-6	3506	Dorchester Road Corridor	West boundary is Ashley River, east and south boundaries are county line, and north boundary is SR 230. Includes the Dorchester State Park, parts of the Ladson community, and the western portion of the City of North Charleston.
Dorc-7	3507	Clubhouse/ Delemar	West, east, and south boundaries separated by county line. North boundary is US 17A and the Great Cypress Swamp tributary.

Dorchester County Category	Description	Operational Area 3501 (2.6%)	Operational Area 3502 (5.3%)	Operational Area 3503 (5.7%)	Operational Area 3504 (5.8%)	Operational Area 3505 (49.3%)	Operational Area 3506 (28.7%)	Operational Area 3507 (2.6%)	County Total
Demographics	Population	3,339	6,807	7,321	7,450	63,321	36,862	3,339	128,440
	Total Households	1,015	2,071	2,226	2,265	19,255	11,209	1,015	39,055
	Age 65 or older	304	607	660	676	5,702	3,317	302	11,568
Additional Demographic Information	Non English Speaking HH	60	121	131	134	1,134	660	60	2,300
	Homeless	32	65	70	72	607	353	32	1,231
	HH w/o Transportation	60	121	131	134	1,134	660	60	2,300
	Disabled	717	1,435	1,560	1,596	13,467	7,834	714	27,323
Initial Shelter	Displaced Households	88	182	194	141	7,974	4,015	126	12,720
	Total Persons (2.72 people per H/H) displaced	240	495	528	384	21,690	10,920	342	34,600
	Remaining HH Sheltered-In Place	927	1,889	2,031	2,124	11,280	7,194	889	26,334
	Total Persons Sheltered-In Place	2,521	5,138	5,525	5,777	30,683	19,568	2,419	71,630
	# of Persons Seeking Short-term ARC shelter	25	53	57	39	1,915	883	30	3,003
Animal Response	# of pets needing shelter	6	14	15	10	498	230	8	781

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Dorchester County Needs Assessment	Description	Operational Area 3501 (2.6%)	Operational Area 3502 (5.3%)	Operational Area 3503 (5.7%)	Operational Area 3504 (5.8%)	Operational Area 3505 (49.3%)	Operational Area 3506 (28.7%)	Operational Area 3507 (2.6%)	County Total
Drinking Water: 3 liters per person per day	ARC Sheltered	75	159	171	118	5,745	2,649	90	9,008
	Total Persons Sheltered in Place	7,563	15,413	16,575	17,330	92,048	58,703	7,257	214,889
	Emergency Workers (10% of displaced persons)	72	148	159	115	6,507	3,276	103	10,380
	Total Liters of water per day	7,709	15,721	16,905	17,563	104,300	64,629	7,450	234,278
Meals (2 meals per day)	ARC Sheltered	50	106	114	79	3,830	1,766	60	6,005
	Total Persons Sheltered in Place	5,042	10,276	11,050	11,553	61,366	39,136	4,838	143,260
	Emergency Workers (10% of displaced persons)	48	99	106	77	4,338	2,184	68	6,920
	Total Meals Per Day	5,140	10,481	11,270	11,709	69,533	43,086	4,967	156,185
Ice = 8 lb. Bag daily (1 bag per person)	ARC Sheltered	25	53	57	39	1,915	883	30	3,003
	Total Persons Sheltered in Place	2,521	5,138	5,525	5,777	30,683	19,568	2,419	71,630
	Emergency Workers (10% of displaced persons)	24	49	53	38	2,169	1,092	34	3,460
	Total Bags of Ice per Day	2,570	5,240	5,635	5,854	34,767	21,543	2,483	78,093
Generators	1 per 385 ARC sheltered	1	1	1	1	4	3	1	12
Portable Toilets	1 per 15 ARC sheltered	2	4	4	3	128	59	2	201

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Dorchester County Category	Description	Operational Area (3501)	Operational Area (3502)	Operational Area (3503)	Operational Area (3504)	Operational Area (3505)	Operational Area (3506)	Operational Area (3507)	County Total
Essential Facilities	#Police Stations Total	0	1	1	1	1	0	0	4
	Probability of at Least Moderate Damage >50%	0	1	1	1	1	0	0	4
	#Schools Total	0	3	3	2	12	5	1	26
	Probability of at Least Moderate Damage >50%	0	3	3	2	12	5	1	26
	# Hospitals Total	0	0	0	1	0	1	0	2
	Probability of at Least Moderate Damage >50%	0	0	0	1	0	1	0	2
	# Fire Stations Total	4	1	3	3	3	2	1	17
	Probability of at Least Moderate Damage >50%	4	1	3	3	3	2	1	17
Utilities	# Potable Water Pipeline Leaks	0	0	0	0	93	6	0	99
	# Potable Water Pipeline Breaks	0	0	0	0	268	1	0	269
	# Electrical Power Facilities	0	0	0	0	1	0	0	1
	# Electrical Power Facilities Damaged	0	0	0	0	0	0	0	0
	# Waste Treatment Plants			17	2	60	37	5	121
		(combination of 3501, 3502, 3503)							
	# Waste Treatment Plants Damaged	0	0	0	0	60	0	0	60
	# Communication Facilities	0	0	0	0	2	0	0	2
	# Communication Facilities Damaged	0	0	0	0	2	0	0	2

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Attachment C to Basic Plan
Operational Area Planning
Table 1

Dorchester County Category	Description	Operational Area (3501)	Operational Area (3502)	Operational Area (3503)	Operational Area (3504)	Operational Area (3505)	Operational Area (3506)	Operational Area (3507)	County Total
Transportation	# Bridges	138 (combination of 3501, 3502, 3503)			29	28	3	14	212
	# Bridges Damaged	44 (combination of 3501, 3502, 3503)			20	28	2	9	103
	# Airports	1			0	1	0	0	2
	# Airports Damaged	0 (combination of 3501, 3502, 3503)			0	1	0	0	1
	# Rail Facilities	0	0	0	0	0	0	0	0
	# Rail Facilities Damaged	0	0	0	0	0	0	0	0
Inventory of Hazardous Materials Sites		7	33	74	34	153	54	20	375
Debris	Total Weight (in tons)	3,974	17,745	29,297	70,753	845,507	414,809	31,581	1,413,666
Fire	# of Potential Fires				0	7	3	0	10
Casualties	Day Event								
	2 p.m.								
	-Minor	12	25	28	85	1,797	729	49	2,725
	-Major	4	7	8	29	657	261	17	983
	-Deaths	1	1	1	7	168	66	4	248
	Night Event								
	2 a.m.								
	-Minor	18	38	42	134	1,853	924	60	3,069
	-Major	4	9	10	38	565	282	17	926
	-Deaths	1	1	1	7	104	54	3	171
	Commuting Event								
	5 p.m.								
	-Minor	14	29	31	0	1,790	821	87	2,772
	-Major	5	10	10	0	833	308	72	1,240
	-Deaths	1	1	3	0	169	68	12	255

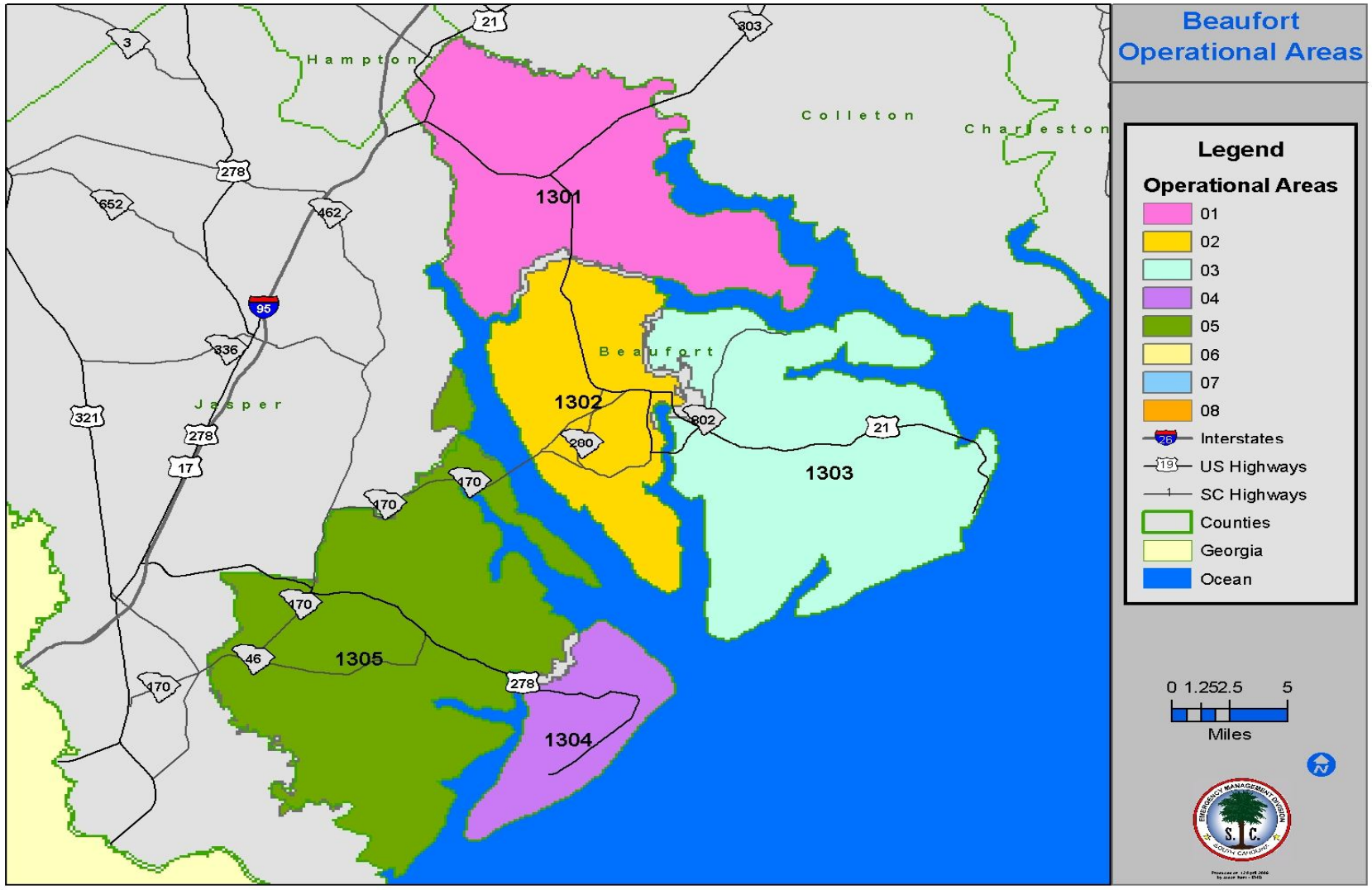
NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Dorchester County Category	Description	Operational Area (3501)	Operational Area (3502)	Operational Area (3503)	Operational Area (3504)	Operational Area (3505)	Operational Area (3506)	Operational Area (3507)	County Total
Power Outage	Total # of Households	1,015	2,071	2,226	2,265	19,255	11,209	1,015	39,055
	Day 1			1,937	1,754	20,340	11,311	989	36,331
		Combination of (3501, 3502, & 3503)							
	Day 30				75	3,032	1,372	81	4,561
Water Shortage	Day 1				0	18,347	0	0	18,347
	Day 30				0	0	0	0	0
Residential Damage	Total # of Households	1,015	2,071	2,226	2,265	19,255	11,209	1,015	39,055
	Moderately damaged				661	7,901	3,773	421	12,757
	Severely damaged				586	2,652	2,048	283	5,569
	Completely Destroyed				556	8,190	3,981	299	13,026

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

BEAUFORT COUNTY



OPERATIONAL AREA DESCRIPTIONS

COUNTY NAME: BEAUFORT			
COUNTY CODE: Beau			
County/ID	**FIPS Code**	**Location**	**Boundary**
Beau -1	1301	Sheldon	West boundary is the county line and the Pocotaligo River. North boundary is county line / Combaee River. East and southern boundary is the Coosaw River. Includes Chisolm and Williman Islands.
Beau -2	1302	Beaufort	Include the entirety of Port Royal Island as bordered by the Broad, Beaufort and Coosaw Rivers. Includes Beaufort and Paris Island Marine Corps Recruit Depot and the US Marine Corps Air Station..
Beau -3	1303	St Helena Island	Includes the islands of St. Helena, Ladys and Fripp also Huntington State Park as bounded by Port Royal Sound, the Atlantic Ocean and St. Helena Sound
Beau -4	1304	Hilton Head	Include the entire island of Hilton Head as bounded by Port Royal Sound, the Atlantic Ocean and Calibogue Sound.
Beau -5	1305	Bluffton	Bounded by the county line to the west and south. The Broad River to the north and east. Includes Bull, Daufuskie and Pinckney Islands.

Beaufort County Category	Description	Operational Area 1 (3.40%)	Operational Area 2 (36.85%)	Operational Area 3 (15.55%)	Operational Area 4 (28.45%)	Operational Area 5 (15.75%)	County Total
Demographics	Population	5,110	55,379	23,369	42,756	23,670	150,283
	Total Households	1,875	17,385	8,971	18,081	9,783	56,095
Additional Demographic Information	Age 65 or older	834	8,955	3,782	6,919	3,830	24,320
	Non English Speaking HH	495	5,308	2,245	4,102	2,271	14,421
	Homeless	50	536	226	414	229	1,455
	HH w/o Transportation	93	1,002	423	775	429	2,722
	Disabled	1,109	11,904	5,027	9,198	5,092	32,330
Initial Shelter	Displaced Households	127	870	596	303	84	1,980
	Total Persons per H/H (2.5 people per H/H) displaced	317	2,174	1,491	758	209	4,950
	Remaining HH Sheltered-In Place	1,748	16,515	8,375	17,778	9,700	54,116
	Total Persons Sheltered-In Place	4,371	41,287	20,938	44,444	24,249	135,289
	# of Persons Seeking Short-term ARC shelter	44	230	155	65	16	511
Animal Response	# of pets needing shelter	12	60	40	17	4	133

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Beaufort County Needs Assessment	Description	Operational Area 1 (3.40%)	Operational Area 2 (36.85%)	Operational Area 3 (15.55%)	Operational Area 4 (28.45%)	Operational Area 5 (15.75%)	County Total
Drinking Water: 3 liter bottle per person per day	ARC Sheltered	133	691	466	196	48	1,534
	Total Persons Sheltered in Place	13,112	123,862	62,814	133,333	72,747	405,867
	Emergency Workers (10% of displaced persons)	95	652	447	227	63	1,485
	Total Liters of water per day	13,340	125,206	63,726	133,756	72,857	408,886
Meals (2 meals per day)	ARC Sheltered	89	461	310	131	32	1,023
	Total Persons Sheltered in Place	8,741	82,575	41,876	88,889	48,498	270,578
	Emergency Workers (10% of displaced persons)	63	435	298	152	42	990
	Total Meals Per Day	8,893	83,470	42,484	89,171	48,572	272,590
Ice = 8 lb. Bag daily (1 bag per person)	ARC Sheltered	44	230	155	65	16	511
	Total Persons Sheltered in Place	4,371	41,287	20,938	44,444	24,249	135,289
	Emergency Workers (10% of displaced persons)	32	217	149	76	21	495
	Total Bags of Ice per Day	4,447	41,735	21,242	44,585	24,286	136,295
Generators	1 per 385 ARC sheltered	1	1	1	1	1	5
Portable Toilets	1 per 15 ARC sheltered	2	16	11	5	2	36

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Beaufort County Category	Description	Operational Area 1	Operational Area 2	Operational Area 3	Operational Area 4	Operational Area 5	County Total
Essential Facilities	#Police Stations Total	0	0	0	0	1	1
	Probability of at Least Moderate Damage >50%	0	0	0	0	0	0
	#Schools Total	2	24	6	9	3	44
	Probability of at Least Moderate Damage >50%	2	24	6	8	0	40
	# Hospitals Total	0	2	0	1	0	3
	Probability of at Least Moderate Damage >50%	0	2	0	1	0	3
	# Fire Stations Total	2	7	6	6	4	25
	Probability of at Least Moderate Damage >50%	2	7	6	4	1	20
Utilities	# Potable Water Pipeline Leaks	53	5	6	1	1	66
	# Potable Water Pipeline Breaks	43	12	14	1	0	70
	# Electrical Power Facilities	0	13	0	1	0	14
	# Electrical Power Facilities Damaged	0	0	0	0	0	0
	# Waste Treatment Plants	1	23	3	102	16	145
	# Waste Treatment Plants Damaged	0	0	0	0	0	0
	# Communication Facilities	0	4	0	1	1	6
	# Communication Facilities Damaged	0	0	0	0	0	0

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

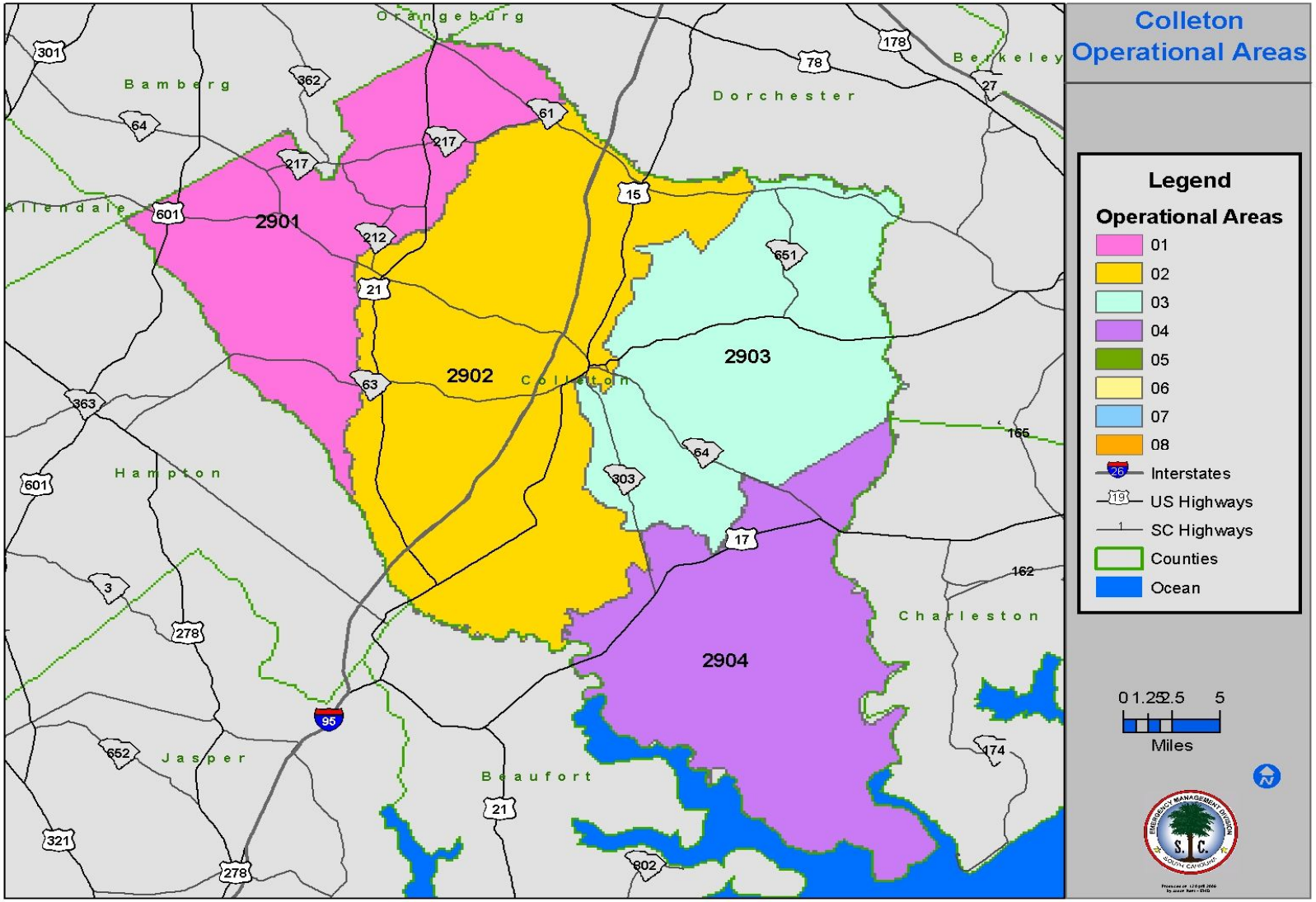
Beaufort County Category	Description	Operational Area 1	Operational Area 2	Operational Area 3	Operational Area 4	Operational Area 5	County Total
Transportation	# Bridges	11	14	11	6	18	60
	# Bridges Damaged	5	1	5	0	0	11
	# Airports	0	2	1	1	0	4
	# Airports Damaged	0	0	0	0	0	0
	# Rail Facilities	2	0	0	0	0	2
	# Rail Facilities Damaged	0	0	0	0	0	0
Inventory of Hazardous Materials Sites		36	184	33	115	67	435
Debris	Total Weight (in thousands of tons)	21.51	215.04	98.06	108.68	45.30	488.59
Fire	# of Potential Fires	0	1	2	3	1	7
Casualties	Day Event						
	2 p.m.						
	-Minor	34	164	95	101	34	429
	-Major	10	44	27	18	6	106
	-Deaths	2	10	5	4	1	22
	Night Event						
	2 a.m.						
	-Minor	38	264	136	63	25	525
	-Major	10	67	33	12	4	126
	-Deaths	1	11	5	1	0	18
	Commuting Event						
	5 p.m.						
	-Minor	31	190	101	78	31	430
	-Major	10	54	34	18	15	132
	-Deaths	1	10	6	2	2	22

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Beaufort County Category	Description	Operational Area 1	Operational Area 2	Operational Area 3	Operational Area 4	Operational Area 5	County Total
Power Outage	Total # of Households	1,875	17,385	8,971	18,081	9,783	56,095
	Day 1	0	6,276	0	0	0	6,276
	Day 30	0	76	0	0	0	76
Water Shortage	Day 1	274	0	0	0	0	0
	Day 30	0	0	0	0	0	0
Residential Damage	Total # of Households	1,875	17,385	8,971	18,081	9,783	56,095
	Moderately damaged	632	3,807	2,236	1,895	1,312	9,882
	Severely damaged	362	1,158	896	261	187	2,864
	Completely Destroyed	158	792	798	200	86	2,034

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

COLLETON COUNTY



OPERATIONAL AREA DESCRIPTIONS

COUNTY NAME: COLLETON			
COUNTY CODE: Coll			
County/ID	**FIPS CODES**	**Location**	**Boundary**
Coll -1	2901	Lodge	West and south borders are the county lines. East and south boundaries generally a line following Buckhead Creek to the Little Salkehatchie River to the county line. Includes Hodge, Williams and Smokes.
Coll -2	2902	Walterboro	West and south boundary generally a line following Buckhead Creek to the Little Salkehatchie River to the county line. North boundary is the county line and eastern boundary from the north and the county line following Sidneys Rd, Round O Rd, Pleasant Grove Rd, Stock Farm Rd, Burlington Rd, Ivanhoe Rd to Walterboro, east of Walterboro to Jefferies Road, Asheboro Rd, SC 303, Fox Creek Rd, Cuckold Creek to the county line. Includes the town of Walterboro.
Coll -3	2903	Cottageville	Western boundary from the north and the county line following Sidneys Rd, Round O Rd, Pleasant Grove Rd, Stock Farm Rd, Burlington Rd, Ivanhoe Rd to Walterboro, east of Walterboro to Jefferies Rd, Asheboro Rd. North and east is the county line. Southern boundary is Lowndes Landing Rd, Parkers Ferry Rd, Highway 64, Fuller Swamp Creek and Horseshoe Creek. Includes Cottageville.
Coll -4	2904	Donnelley Wildlife Management Area	Bounded by Combahee River to the west, south and east by Edisto River and the Saint Helena Sound. The north Lowndes Landing Rd, Parkers Ferry Rd, Highway 64, Fuller Swamp Creek and Horseshoe Creek and Fox Creek Road, Cuckold Creek to the county line. Includes the Donnelley Wildlife Management Area, Bear island Management Area and St Helena Sound Heritage Trust Preserve.

Colleton County Category	Description	Operational Area 2901 (10.40%)	Operational Area 2902 (50.87%)	Operational Area 2903 (32.42%)	Operational Area 2904 (6.31%)	County Total
Demographics	Population	4,146	20,282	12,926	2,516	39,870
	Total Households	1,508	7,715	4,805	1,044	15,072
Additional Demographic Information	Age 65 or older	538	2,630	1,676	327	5,171
	Non English Speaking HH	119	582	371	72	1,144
	Homeless	41	201	128	25	395
	HH w/o Transportation	77	375	239	47	738
	Disabled	911	4,457	2,841	554	8,763
Initial Shelter	Displaced Households	0	144	485	221	850
	Total Persons per H/H (2.6 people per H/H) displaced	0	374	1,261	574	2,209
	Remaining HH Sheltered-In Place	1,508	7,571	4,320	823	14,222
	Total Persons Sheltered-In Place	3,921	19,686	11,232	2,139	36,978
	# of Persons Seeking Short-term ARC shelter	0	44	150	58	252
Animal Response	# of pets needing shelter	0	11	39	15	66

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Colleton County Needs Assessment	Description	Operational Area 2901 (10.40%)	Operational Area 2902 (50.87%)	Operational Area 2903 (32.42%)	Operational Area 2904 (6.31%)	County Total
Drinking Water: 3 liter bottle per person per day	ARC Sheltered	0	131	450	175	756
	Total Persons Sheltered in Place	11,764	59,057	33,695	6,418	110,935
	Emergency Workers (10% of displaced persons)	0	112	378	172	663
	Total Liters of water per day	11,764	59,300	34,524	6,766	112,354
Meals (2 meals per day)	ARC Sheltered	0	87	300	117	504
	Total Persons Sheltered in Place	7,843	39,371	22,464	4,279	73,956
	Emergency Workers (10% of displaced persons)	0	75	252	115	442
	Total Meals Per Day	7,843	39,533	23,016	4,510	74,902
Ice = 8 lb. Bag daily (1 bag per person)	ARC Sheltered	0	44	150	58	252
	Total Persons Sheltered in Place	3,921	19,686	11,232	2,139	36,978
	Emergency Workers (10% of displaced persons)	0	37	126	57	221
	Total Bags of Ice per Day	3,921	19,767	11,508	2,255	37,451
Generators	1 per 385 ARC sheltered	0	1	1	1	3
Portable Toilets	1 per 15 ARC sheltered	0	3	10	4	17

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Colleton County Category	Description	Operational Area (2901)	Operational Area (2902)	Operational Area (2903)	Operational Area (2904)	County Total
Essential Facilities	#Police Stations Total	0	1	0	0	1
	Probability of at Least Moderate Damage >50%	0	1	0	0	1
	#Schools Total	2	18	6	4	30
	Probability of at Least Moderate Damage >50%	2	18	6	4	30
	# Hospitals Total	0	1	0	0	1
	Probability of at Least Moderate Damage >50%	0	1	0	0	1
	# Fire Stations Total	3	6	3	3	15
	Probability of at Least Moderate Damage >50%	2	6	3	3	14
Utilities	# Potable Water Pipeline Leaks	0	2	1	4	7
	# Potable Water Pipeline Breaks	0	4	2	12	18
	# Electrical Power Facilities	1	5	0	0	6
	# Electrical Power Facilities Damaged	0	0	0	0	0
	# Waste Treatment Plants	0	10	5	0	15
	# Waste Treatment Plants Damaged	0	0	0	0	0
	# Communication Facilities	0	0	1	0	1
	# Communication Facilities Damaged	0	0	0	0	0

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 1

Colleton County Category	Description	Operational Area (2901)	Operational Area (2902)	Operational Area (2903)	Operational Area (2904)	County Total
Transportation	# Bridges	52	142	44	11	249
	# Bridges Damaged	0	42	38	5	85
	# Airports	0	0	1	0	1
	# Airports Damaged	0	0	0	0	0
	# Rail Facilities	0	0	0	0	0
	# Rail Facilities Damaged	0	0	0	0	0
Inventory of Hazardous Materials Sites		5	110	48	14	177
Debris	Total Weight (in thousands of tons)	4.55	87.28	111.22	64.15	267
Fire	# of Potential Fires	0	1	1	1	3
Casualties	Day Event					
	2 p.m.					
	-Minor	3	68	106	42	219
	-Major	0	16	32	14	61
	-Deaths	0	3	7	3	14
	Night Event					
	2 a.m.					
	-Minor	4	64	161	43	272
	-Major	0	11	41	12	65
	-Deaths	0	2	5	2	9
	Commuting Event					
	5 p.m.					
	-Minor	3	58	126	43	230
	-Major	0	21	66	29	116
	-Deaths	0	3	10	4	18

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Colleton County Category	Description	Operational Area (2901)	Operational Area (2902)	Operational Area (2903)	Operational Area (2904)	County Total
Power Outage	Total # of Households	1,508	7,715	4,805	1,044	15,072
	Day 1	0	2,654	1,504	741	4,899
	Day 30	0	11	2	1	15
Water Shortage	Day 1	0	0	0	0	0
	Day 30	0	0	0	0	0
Residential Damage	Total # of Households	1,508	7,715	4,805	1,044	15,072
	Moderately damaged	427	2,434	1,554	501	4,916
	Severely damaged	48	760	1,320	99	2,227
	Completely Destroyed	0	115	863	583	1,561

NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

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NOTE: Bottled Water and Ice are worse case daily requirements. Sheltered In-Place are homeowners who remain in their homes but are w/out water and power. *At least moderate damage means the facility needs to be inspected before use. **Essential Facility loss estimates, debris, and hazardous material inventory are based on 2000 HAZUS data. ***The population data was developed using the 2008 projected US Census Estimates.

Table 2 – Critical Resources Needs Assessment

The requirements listed below are estimates on which to base the State's resource requirements following a strong earthquake. The projected requirements were based on the loss estimation summary for Berkeley, Charleston, Dorchester, Beaufort, and Colleton counties.

Resource	Projected Requirement	Sources	Projected Shortfall	Additional Sources
Blankets 2 per person sheltered	29,640 (14,820 (sheltered)	B&CB limited supply	29,640 (14,820 (sheltered)	FEMA Voluntary Organizations
Cots 1 per person shelter x 20% overture	17,784	B&CB limited supply	17,784	Contractors FEMA EMAC
Mobile Communication Vehicles	21 (One per OPS Area)	1) SCEMD 2) Counties	21	FEMA EMAC
Body Bags	1,173 deaths based on a daytime event	DHEC acquired through Coroners' Association	1,173	FEMA EMAC Contractors
Tents				
Mobile Kitchens	21 (1 per OPS Area	Voluntary Organizations		
Medical Units	21 (1 per OPS Area	1)DHEC 2)Voluntary Units		
Inspection Teams to evaluate buildings post-disaster	105 teams (5 teams per OPS Area)	B&CB Volunteer Groups	105	FEMA EMAC Private Contractors
Heavy Equipment				
Debris removal equipment	105 teams (5 teams per OPS Area)	1) Military Department 2) Counties 3) State Agencies		
Light Sets	1 per sheltered HH			

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The Modified Mercalli Scale measures the severity of earthquake effects. The Magnitude Scale measures the amount of energy released from the earthquake. The Intensity Scale differs from the Magnitude Scale in that the effects of any one earthquake vary greatly from place to place, so there may be many Intensity values (e.g.: IV, VII) measured from one earthquake. Each earthquake, on the other hand, should have just one Magnitude. These are typical effects of earthquakes in various magnitude ranges. Source: Adapted from *U.S. Geological Survey* documents.

The Modified Mercalli Scale			**The Magnitude Scale**
I	Micro	***(I)*** Not felt except by a very few under especially favorable conditions.	< 2.0
II – III	Minor	***(II)*** Felt only by a few persons at rest, especially on upper floors of buildings. ***(III)*** Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.	2.0 – 2.9 3.0 – 3.9
IV – V	Light	***(IV)*** Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably. ***(V)*** Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	4.0 – 4.9
VI – VII	Moderate	***(VI)*** Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. ***(VII)*** Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.	5.0 – 5.9
VII – IX	Strong	***(VIII)*** Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. ***(IX)*** Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.	6.0 – 6.9
VIII or higher	Major to Great	***(X)*** Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. ***(XI)*** Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly. ***(XII)*** Damage total. Lines of sight and level are distorted. Objects thrown into the air.	7.0 and higher

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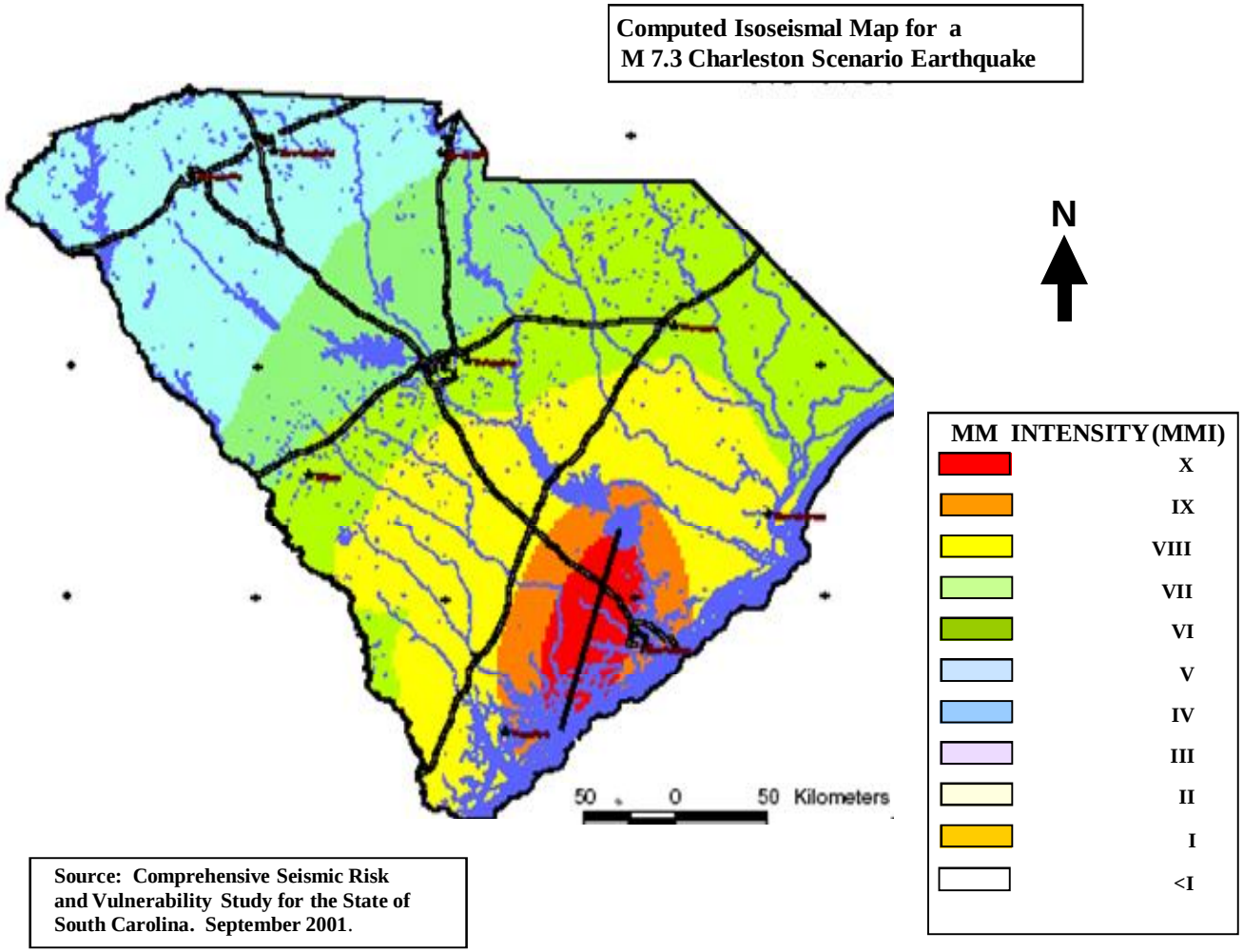
Computed Isoseismal Map for a
M 7.3 Charleston Scenario Earthquake
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MM INTENSITY (MMI)
X
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Source: Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina. September 2001.

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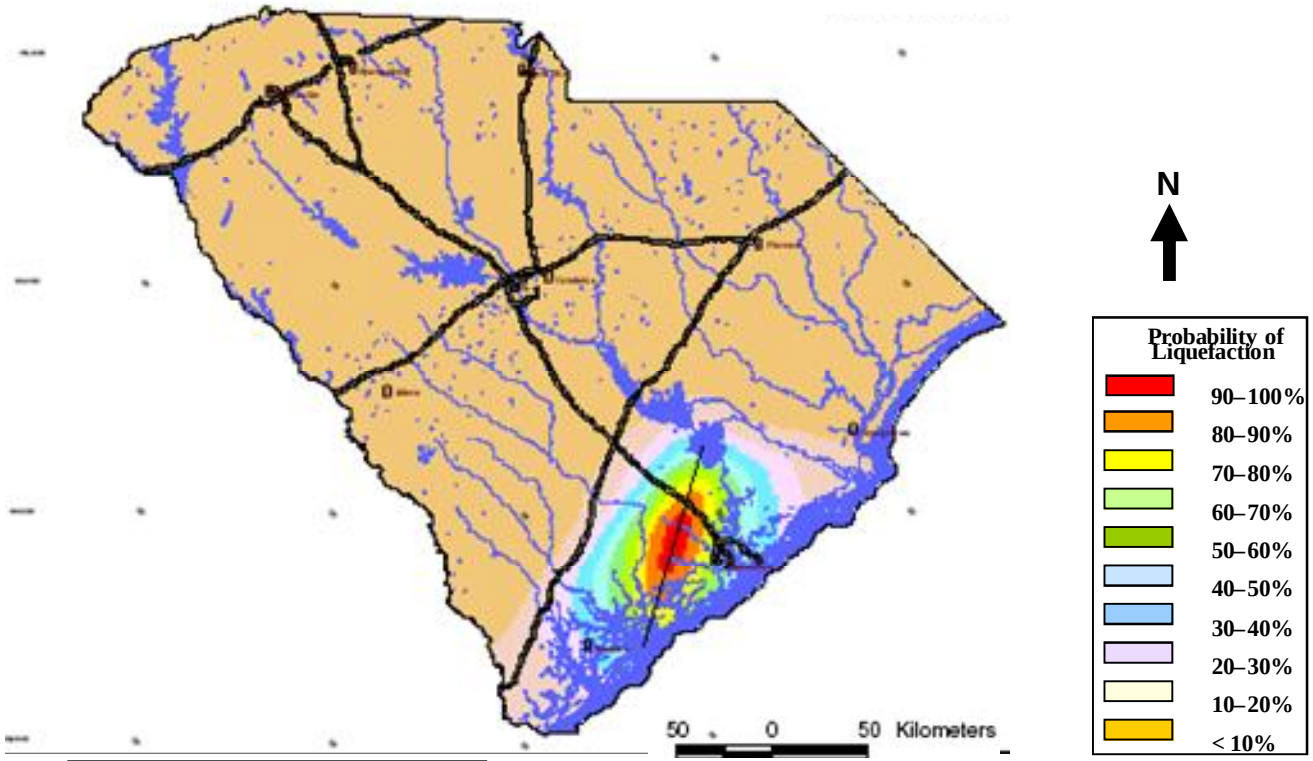
Probability of Liquefaction for a M 7.3 Charleston Scenario Earthquake



Source: Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina. September 2001.

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